THE OIL WEEKLY

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The Oil Man's Calendar

JULY 12-13	Seventeenth International Geological Congress, Moscow, U.S.S.R. Interstate Oil Compact Commission, Santa Fe, New Mexico.
AUG. 10-15	Third Michigan Oil & Gas Assn., Mt. Pleasant.
SEPT. 15-17	National Petroleum Association, Hotel Traymore, Atlantic City, New Jersey.
16-19	Pacific Oil Show & Black Gold Festival, Taft, California.
SEPT. 27 OCT. 1	American Gas Association, Cleveland, Ohio.
OCT. 11-15	Twenty-Sixth National Safety Congress & Exposition, Kansas City, Missouri.
11-16	Oil-World Exposition, Houston, Texas.
13-14	Indiana Independent Petroleum Association, Indianapolis, Ind.
14-16	American Association of Petroleum Geologists, Mid-Year Meeting Pittsburgh, Pennsylvania.
14-16	Independent Petroleum Association of America, Houston, Texas.
18-22	American Welding Society, Atlantic City, New Jersey.
21-22	Michigan Petroleum Association, Traverse City, Michigan.
29-30	Mid-Continent Oil and Gas Association, Texas Division, Dallas, Texas.
NOV. 8-12	American Petroleum Institute, (Annual), Chicago, Illinois.
1938 MAR. 16-18	Annual Meeting, American Association of Petroleum Geologists, Roosevelt Hotel, New Orleans, La.

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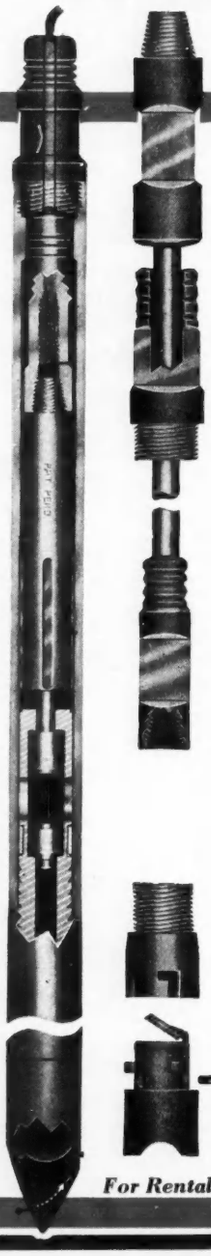

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LOOKING AHEAD

WITH THE EDITOR

SINCE 1934 the Oriskany sand has been proved a prolific producer of gas in West Virginia; in fact developments have reached such proportions that The Oil Weekly has made arrangements for two special articles. The first of the two will appear next week and will deal with the geology and economic aspects. The second will be published the following week and will discuss new operating practices and problems that have been created.

It is estimated that more than 200,000,000,000 cubic feet of gas has been discovered, which is twice the amount of gas sold annually from the entire state during the past three years. It is, therefore, quite evident that the development is of considerable consequence. The wells average from 4800 to 5000 feet in depth and cost approximately $25,000 to complete.

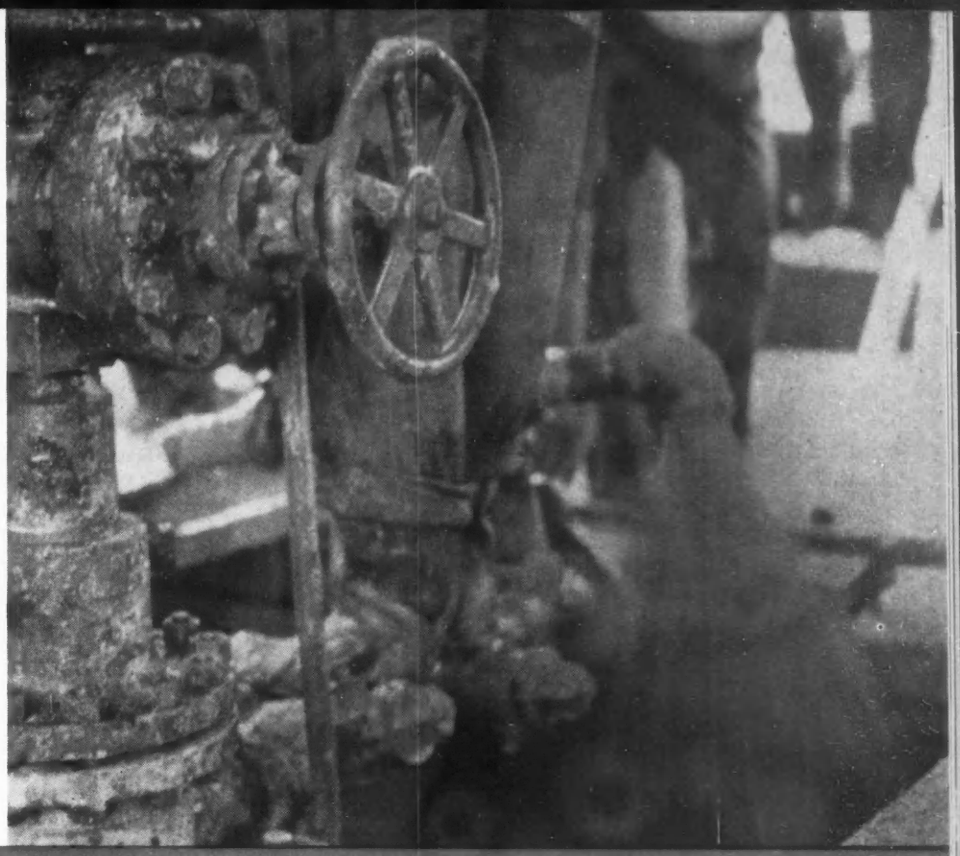
Further enhancing the pay-off possibilities of the region is the thick sand bed and apparent lack of oil and salt water, which have troubled earlier gas fields in the Appalachian region.

The first article includes two large maps, one of which will be presented in two colors.

ALTHOUGH the boiler is one of the largest, strongest and most expensive equipment items used in the oil field, it is not immune to handling and operating abuses. On the contrary one of the heaviest tolls in performance service and efficiency is extracted from boilers annually, and largely because of neglect or carelessness. The treatment they receive both inside and outside determines their service life to a large extent, and it is said that the average oil field boiler operates little more than half that which should be recorded under proper care. This will be the subject of the next "Equipment Care Series," article, which is to be published next week.

MANY new operating problems were created for gas company engineers when the Texas legislature enacted a law requiring the introduction of malodorants into the fuel. The operating problems are of both a chemical and mechanical nature, and they must be solved immediately for the law becomes effective shortly. The complications that are now being studied will be discussed next week.

THIS WEEK



» THE FIRST OIL produced at Friendswood, an important new Gulf Coast strike, is shown here. It was taken a few minutes after pumps ceased washing Humble Oil & Refining Company's Settegast 1, and shows the well cleaning itself. The well made 650 barrels through a quarter-inch choke from one of the thickest bodies of producing sand encountered in the region. It is but three miles from the Hastings field, and some believe it may prove an extension.

CRUDE oil stocks are too low, declared several members of the Interstate Compact Commission last week, after the Bureau of Mines reported to them on the physical condition of oil in storage. This conclusion was reached despite the fact the study failed to consider unusable tank bottoms, because it was found companies have been reporting only refinable volumes, and although gasoline content losses were not found to be large, as most of the oil in storage was found to be of recent origin. However, the report showed that a large quantity was required for lease tanks and pipe line operation, and therefore is not available for immediate use. **Page 26.**

DEVELOPMENT of substitutes for petroleum will offer one of the broadest fields for technological research in coming years, declared a report of the National Resource Committee last week. The report continued by stating that while petroleum apparently could supply the need for a number of years, it would be wise to keep abreast of substitute development so as to be prepared for the time when a shortage of oil occurred. Most substitutes, it was declared are not now feasible, with coal and shale offering the best opportunity for developing something to compete with oil prices. **Page 30.**

INDEPENDENT groups in the oil industry last week carried their fight against integrated companies to the House Committee on Foreign and Interstate Commerce. By so doing they hoped to procure quick action on the Bierman bill, which would prohibit producers and refiners from also engaging in marketing. However, it is doubtful if such a controversial subject will be considered this year. **Page 27.**

CURRENT SITUATION

(Latest Available Weekly Data)

Outlook.—Favorable.

Crude Market.—Remains strong.

Refined Oil Markets. — Gasoline prices working higher.

Crude Production. — 3,542,850 barrels daily; up slightly.

Crude Runs to Stills.—Up 55,000 barrels to 3,325,000 daily.

Crude Stocks.—Up 1,065,000 barrels to 308,744,000.

Gasoline Stocks. — Down 1,354,000 barrels to 73,976,000.

Gas and Fuel Oil Stocks. — Up 1,973,000 barrels to 103,537,000.

Drilling.—Completions last week 606; down 71.

See* MARKET SECTION *for Details

IT is very fitting that this issue be devoted especially to the Permian Basin district of West Texas and New Mexico, for this 20,721,000-acre region has been restored to a leading position in field activity and important discoveries. The present boom is exceeding the one of 1927 and 1928, when it assumed national importance.

Included are a number of feature articles discussing the trend of exploratory work, reserves, production and drilling, as well as some articles on operating practices. One of the important features of the issue is the presentation of a concise factual of the more than 125 fields. This shows the location, date of discovery, number of acres proven, number of wells drilled, reserves, producing depths, type of oil, market outlets and principal outlets. In addition, a large two-color insert map showing pools and dry holes has been prepared.

A study of Permian Basin crude reserves shows a large increase, until the region now has 1,790,512,000 barrels, or nearly 14 percent of the nation's volume. Moreover, additional enlargement may be anticipated.

From a drilling standpoint, the district is at an all-time high. Completions, according to the rate in the first half of 1937, will double the number completed in 1928, and be far in excess of those in 1936. Besides, the amount of initial production is expected to establish a new peak.

An impressive record of crude oil production has been established, and the prospects for increased output are bright. Although an important area for only a little longer than 10 years, it has produced as much as the Texas Gulf Coast, which is 40 years old, and nearly the same as 50-year Kansas production.

Interstate Compact

Commissioners hear report on physical condition of stored oil, which showed most stocks of recent origin, that 32,000,000 barrels needed for operating, and fails to consider unusable tank bottoms.

A YEAR ago members of the Interstate Compact Commission came to the conclusion that much of the oil held in storage in the United States was not refinable and that a large percentage of the gasoline content had been lost through evaporation. Consequently, action was taken to procure a physical inventory of petroleum stocks. By action of Congress, an appropriation to the United States Bureau of Mines was made to do the work.

The long awaited result of the Bureau study was given to the compact commissioners at a meeting early last week in Santa Fe, New Mexico. While only a preliminary report, it was hailed by several members as indicating that stocks were too low rather than too high in the nation. This conclusion was reached, although the study failed to prove that unusually large losses had occurred to the gasoline percentage and that there were huge volumes of so-called "mush" in tank bottoms, which would not be usable. However, the report did present the location of crude stocks, which tended to show that much of the stored oil was not available for immediate use.

Seek Compact Extension

The crude stock study was the highlight of the meeting, but in addition to this, the commission voted a request of President Roosevelt that he present to Congress officially the need for congressional ratification of the compact extension. The member states already have renewed membership in the compact, which expires in September, unless Congress acts.

Reaffirm Policies

Members of the commission recommitted themselves to following a policy of mutual regulation of oil production. They were assured by A. G. White of the United States Bureau of Mines that the federal government had abandoned policies which oil men considered dictatorial.

The old policy of setting up minimums and maximums for the oil industry has been repudiated, and the recommending of withdrawals from stocks will be discontinued, he stated.

This action was considered by members as a great victory for oil men, as they remove another trace of the dictatorial policies of the government.

"The sole function of the Bureau of Mines in connection with the industry is merely to determine facts for policy-forming purposes. Such facts will be turned over to the industry for consideration and use, if desired—attempting in no way to control or influence company policy."

Hot Springs, Arkansas, was selected as the site for the next meeting of the Interstate Compact Commission.

Thompson Elated

Colonel E. O. Thompson, member of the Texas Railroad Commission, and chairman of the Interstate Compact Commission, was elated, claiming that the report proved his contention that the United States is not overproducing, that stocks are not too high, and the industry is operating on a stabilized basis.

He based his views on the figures showing the location of stocks. The total refinable oil showed about a 59-day supply of oil available for immediate use. Much of the oil reported as in storage was found to be on leases and in pipe lines. Therefore, it is working stocks rather than being available for use.

No Estimate of "Mush"

The report did not include any estimate of the amount of "mush" in tank bottoms for several reasons. In the first place, the important fact that all concerns include only net merchantable oil in their monthly stocks reports to the Bureau of Mines was developed. No water, bottom sediments or other foreign materials are included. Therefore, figures compiled by the Bureau of Mines have been representing only refinable oil. Moreover, such figures were not available.

Old Stocks Liquidated

The bureau made a comparison of stocks as of June 30, 1936, and as of March 31, 1937, that was very interesting and important.

On June 30, 1936, there were 311,000,000 barrels of refinable oil in storage, of which 118,000,000 barrels represents oil placed there prior to the first of the year 1936, and 193,000,000 barrels was run after that time. This was very interesting, as it showed the largest portion of the oil was comparatively new.

The statistics as of March 31, 1937, were even more important. At that time, when 298,000,000 barrels was in storage, only 93,000,000 barrels was oil older than January 1, 1936, and 205,000,000 barrels was younger crude. Therefore, there has been a large percentage of the older stocks liquidated, and naturally the loss in gasoline content will not be as large as anticipated in many quarters.

Large Working Volume

Moreover, the report for March 31, 1937, showed that there was 11,000,000 in lease working tanks and 21,000,000 barrels in active pipe lines. This 32,000,000 barrels, therefore, are needed for operating purposes and are not available for marketing. This leaves a total of 266,000,000 barrels available on March 31 this year as stock available for immediate use.

It was on this figure that Thompson asserted the industry's stocks were too low.

The report explained that in present refinery practice, the average recovery of gasoline (exclusive of the quantity of natural gasoline added) is about 44 percent of the volume of crude oil run to stills. On this basis, the 266,000,000 barrels of crude would make 117,040,000 barrels of gasoline if sent through the stills.

Gasoline Losses

While the bureau study found instances of large gasoline content losses where crude was held in storage over a long period of time, it developed that this depended largely upon the physical characteristics of the product. However, it also was disclosed that much of the old stocks had been topped, and therefore it was difficult to arrive at any gasoline loss. Moreover, the year in which oil was stored often was uncertain because of the practice of topping it. The latter, as was to be expected, presented a real difficulty in developing the basic statistical data. It was found that many tank farms along major pipe lines contained oil that was gathered from several fields in a general area and could be classified only in general terms.

It was declared that instances were found of large distillate losses, but the weighted average was not excessive. "Much of the oil that has been in storage for long periods compares more favorably with current production than might be expected from a consideration of evaporation losses alone," it was asserted. In this connection it was pointed out that "the distillate recoverable below 392° F. from 39,000,000 barrels stored before 1925 (as of January 1, 1936) represents 22.8 percent of the crude oil and has an average gravity of 53.7° A. P. I. This may be compared with distillates totaling 29.2 percent of the crude oil and having a gravity of 58° A. P. I. recoverable from the 165,000,000 barrels stored in 1936. On the other hand, the 69,100,000 barrels of oil stored (east of California) from 1925 to 1935 have a total distillate content approximately equal to that of oils stored in 1936, and the average gravity of the distillate from the 1925-1935 oils is about 0.7° A.P.I. lighter than the average gravity of the distillate from the 1936 oils.

Final results of the survey await more extensive analysis of the data that have been assembled which, in addition to comprehensive information about the quantity and characteristics of crude oil in storage, is expected to shed much interesting new light on losses of oil by evaporation, changes in characteristics of oil produced from a field as it is depleted, and like factors.

Legislative Actions

Independent Petroleum Association to oppose reduction in depletion allowance . . . Independent marketers seek action separating marketing from other branches.

WHILE independent marketing groups were in Washington seeking to procure quick action on legislation that would prohibit producers or refiners from engaging in marketing business, at Santa Fe, New Mexico, executives of the Independent Petroleum Association of America were laying plans for a determined drive against the proposed reduction of federal depletion allowances. These were two important legislative developments of the week, and neither are expected to get action in Congress this year.

Depletion Allowance Fight

The Independent Petroleum Association of America executive committee, meeting at Santa Fe, New Mexico, following the Interstate Compact Commission meeting, adopted another plank for its program. The new addition will be opposition to any reduction in depletion allowances now allowed oil companies in the federal income tax bill.

Russell B. Brown, general counsel of the association, will head the drive against elimination of the depletion clause. He asserted, "The depletion has been considered by congress at intervals for the last 8 or 10 years. It finally was adopted by congress and accepted by the industry as being fair and equitable to both concerned. It is not a means of evading or dodging the tax; it is simply a method of simplifying the reporting and collection of the tax. There is no subterfuge; there can't be because the internal revenue department has worked with the industry in clarifying the method."

Charles F. Roeser, president of the association, told committeemen the new steps were not approached hurriedly, but after a canvass of the sentiment of the industry.

Six-Plank Platform

The platform of the Independent Petroleum Association of America now includes the following planks:

1. Adoption by congress of legislation definitely limiting the quantity of foreign petroleum and products imported to a fixed ratio to the estimated demand in the United States.

2. Continuation of the survey of quantities and qualities of crude oil in storage (see page 26), with a view to ascertaining whether this is or is not at its economic level, and thereby avoiding either uneconomic additions or withdrawals.

3. A practical and equitable method whereby domestic production shall be held within the limit of national consumption for each state.

4. Discontinuance of the costly practice of excessive drilling, which adds to production costs, causes a decrease in daily allowables per well, and rarely results in advantages. In place of this practice, provisions would be substituted for planned, orderly developments of fields by agreement.

5. Provision for voluntary agreements within the industry, subject to the approval of the proper federal agency.

6. The new plank of fighting any changes in the present federal depletion allowance, as proposed by the treasury department.

Independents Seek Separation

Independent groups in the oil industry this week carried their fight against the integrated companies to the House Committee on Foreign and Interstate Commerce in an effort to secure quick action on legislation introduced by Representative Biermann of Iowa to prohibit producers or refiners of petroleum from also engaging in marketing.

In view of the spreading desire to adjourn the session of Congress as soon as possible, however, it is not believed in informed circles that the committee will be willing to undertake consideration of such a highly controversial subject this year.

Members of the committee opposed to consideration of the bill at this time point out that lengthy hearings would probably be required if the committee determined after preliminary study that the legislation was desirable, a question on which there is a sharp division of opinion.

Even if the committee made a favorable report on the bill, it was said, it would require considerable time to secure passage in the House and the measure would then have to go to the Senate.

The legislation has been suggested to Congressional committees several times in the past—last during the hearings on extension of the Connally contraband oil act—by the National Oil Marketers Association, which this week declared the Biermann bill "strikes at the very root of the oil jobbers' troubles."

The bill, it was declared by Paul E. Hadlick, secretary of the association, "would prevent the major oil companies from treating marketing as a dumping ground and from subsidizing their losses in marketing out of profits in production, pipe line operation and refining.

"Congressman Bierman's bill would injure no one in the long run," he said. "By preventing losses in marketing being paid out of profits in other branches it should leave the producers and refiners better off financially than before the divorcement. It would stop the race between refiners to control marketing outlets and make oil mar-

Labor Situation

South Penn workers plan independent union . . . C. I. O. charges Waggoner Refining is unfair.

THERE were comparatively few developments in the labor situation last week.

At Bradford, Pennsylvania, field workers of South Penn Oil Company launched plans for the formation of an independent organization to succeed the old company representative plan, which was discontinued with enactment of the Wagner Labor law, which bans employee groups sponsored by company managements.

Further organization will be undertaken by South Penn workers at meetings to be held in Oil City July 20 and in Bradford on July 24. A spokesman for the group said there was little possibility that the new organization would affiliate with C. I. O. "Our boys are well satisfied, there is no reason why they should join the C. I. O.," he explained.

It is possible that employes of Indian Territory Illuminating Oil Company may request reduced working hours and higher wages. This developed at a meeting held in Oklahoma City last week. I. T. I. O. employes are members of C. I. O. Reports are that workers will seek a reduction of working hours from 40 to 36 hours, and a higher wage scale.

On the complaint of J. L. Coulter, international vice president of C. I. O., the Waggoner Refining Company and Waggoner Estate has been charged before the National Labor Relations Board with violating the Wagner act. Coulter charged that 17 refinery employes were discharged because of their union activity, and filed the complaint against both the estate and the refining company.

At the hearing, held in Vernon, Texas, R. B. Anderson, Waggoner attorney, claimed the board had no jurisdiction in the matter.

R. G. Cocanower, superintendent of the refinery, testified that the Waggoner Refining Company and Waggoner Estate were separate, and should not be jointly charged.

keting stand squarely on its own. The competition no doubt would still be very keen, but all in the race would start at the same point—none would be allowed the handicap now enjoyed by some oil marketing units.

"It is hoped that by the time Biermann's 'petroleum marketing divorcement act' comes up for a hearing before the House Committee on Interstate and Foreign Commerce that the Securities and Exchange Commission will have compiled sufficient data on oil company operations to show conclusively that oil marketing by the major oil companies has been conducted at a loss. Every instance thus far brought to our attention indicates that the major oil companies are operating their marketing plants at a loss."

Must Use Malodorant

Sale of natural gas to schools and other public buildings in Illinois is banned unless the gas contains an injection of malodorant under terms of a bill signed by Governor Henry Horner last week. The measure is intended to help prevent disasters such as occurred in New London, Texas, several months ago.

Oil in the Courts

Motions seeking additional bills of particulars filed in Madison suit . . . Oklahoma back allowable upheld . . . Jury charges Texas officials with permitting thefts and tax evasions.

MOTIONS for additional bills of particulars for the three trade journal defendants in the Government's "oil conspiracy" case scheduled for trial at Madison, Wisconsin, October 4, were filed in federal court last week. Arguments on the motions will be heard before Federal Judge Patrick T. Stone at Madison on August 3.

The court last week also continued to that date arguments on immunity motions filed on behalf of Bernard L. Majewski, Chicago, vice president in charge of sales for Deep Rock Oil Corporation, and Keith Fanshier, Chicago, petroleum editor of the Chicago Journal of Commerce, both of whom were grand jury witnesses.

Attorney Morris F. Hanning, Cleveland, appeared in court Tuesday on behalf of the National Petroleum News, Platt's Oilgram, and Warren C. Platt, president of both publications, to enter notice of a new motion for a bill of particulars. The original motion for a bill of particulars was denied April 21. In the motion filed last week, it is declared that it would be "an interminable and impossible burden, both from the point of view of time and of expense" to look up the history of each of 22,148 market quotations published in the trade journals during the year and three-quarters covered by the indictments. The motion asks the government to specify which quotations are considered part of the conspiracy.

Attorney Samuel T. Lawton, representing the Chicago Journal of Commerce and Fanshier, notified the court that he will present a similar motion.

The indictments to be tried this fall charge 24 major oil companies, 71 individuals, for the most part officials of the indicted companies, and the three trade journals with conspiracy to artificially raise the retail price of gasoline sold in 10 mid-western states and with attempting to "squeeze out" independent jobbers. Pleas of not guilty have been entered by all the defendants. All but four, who are officials of Gulf Oil Corporation, have waived removal to Madison for trial.

In Pittsburgh last week, William V. Hartman, vice president of Gulf Oil Corporation, was given a hearing before United States Commissioner Roger Knox on his fight against removal to Madison. The decision in his case will also determine whether J. F. Drake, president of the corporation, and H. C. Meyer, district manager, must stand trial in Madison. Commissioner Knox has not yet announced his decision.

Former United States Senator David A. Reed, and Attorneys John E. Green and Archie D. Gray, of Houston, Texas, represented Hartman at the removal hearing. Also present was Colonel William J. Donovan, former assistant attorney general and chief counsel for all defendants. The government was represented by William P. Crawford, Superior, Wisconsin.

O. H. Carlisle, the fourth Gulf official resisting removal, plans an appeal to the Fifth Circuit Court of Appeals at New Orleans from the decision of Federal Judge T. M. Kennerly who ordered his removal from Houston.

Back Allowable Upheld

Petition for a rehearing in an appeal case won by British American Oil Producing Company was denied Earl Foster, proration attorney, last week by the Oklahoma Supreme Court, and the original opinion holding in favor of the oil concern was amended in favor of the company, granting retroactive back allowable of 109,320 barrels of oil for Mary Green 1, discovery well of the Mansion area of the Oklahoma City field.

Original petition filed by the company stated the well was completed October 2, 1935, and that the official potential was delayed several days by the conservation staff. The resulting loss of a swab in the well made it impossible to establish a potential figure for the well until December 26, 1935.

Refusal of the commission to grant the company any back allowable at the well was reversed by the court in June and the amending order filed July 9, 1937. It stated in part: "The cause is reversed with directions to the Corporation Commission to enter proper order to allow the appellant 109,320 barrels of oil as a 'retroactive adjusting allowable' for the period under consideration."

Jury Criticizes Texas Officials

A Smith County grand jury, which has been investigating oil industry conditions in the East Texas district, expressed scathing criticism of the Texas Railroad Commission and the state comptroller's office last week. The jury charged that there was "utter lack of cooperation" between the two departments, which is costing the state of Texas many millions of dollars and shortening the life of the East Texas oil field. Oil thefts and tax evasions occur because of the lack of cooperation, the jury charged.

The report said in part: "Evidence has been abundant that the comptroller's department had had knowledge for more than 18 months of all the violations investigated here, and have also had in their possession documentary evidence, or were actual witnesses to violations of the conservation laws of this state. And although requested by members of other departments to disclose this information, the same was refused or no effort was made to deliver it to the proper authorities."

George Sheppard, state comptroller, and C. V. Terrell, chairman of the Texas Railroad Commission, declined to comment on the report.

Approves Huge Bond

A $2,800,000 appeal bond in the Ed Roos vs. The Texas Company case was approved in Houston last week by Federal Judge T. M. Kennerly. This means that the case for the fifth time will be carried to higher courts.

Roos contends he held vast oil lands in Mexico from which The Texas Company of Mexico produced more than $20,000,000 worth of petroleum.

He entered suit against the Mexican concern two decades ago in San Antonio. Up and down the courts went the legal battle. Three times it was carried to higher courts on appeal. It paused for a time when Roos obtained judgment for $1,500,000 in royalties, but in the meantime, the Mexican firm had been declared bankrupt. Consequently, attorneys for Roos filed ancillary bills against The Texas Company, demanding enforcement of claims against what they asserted was its Mexican subsidiary. Last spring Judge Kennerly ordered the judgment enforced. Interest over the long period had increased the amount to more than $2,000,000, which caused the posting of what is believed to be the largest bond ever approved by Judge Kennerly.

Proration Matters

Until proration rules revised 43 Kansas fields to forego potentials . . . Cotton Valley operators want 160-acre spacing . . . Texas fields get operating rules.

PENDING revision of proration rules for Kansas, 43 of its oil fields have been withdrawn from the requirement of potential taking. They will continue to produce percentages of allowables as determined by the order of the Kansas Corporation Commission as of July 1.

Several weeks may elapse before new proration rules are written. The general hearing on the subject closed July 10, after starting July 1, with a recess over the holiday period early in the month. Opinion of producers was divided between a proposal to adopt a composite decline curve for the state. New wells would by this arrangement take physical production test upon completion and be granted allowables according to places on this decline curve. Thereafter allowables would be determined by the decline curve.

Another group held out for actual physical tests, at intervals of each six months, for determining potentials.

Indications are that the new rules will consist of a compromise between the two suggestions.

The fields removed from potential tests until new regulations are written are shown below, with number wells, July 1, and percentage allowed for that month:

Field Name	No. Wells July 1	Potential July 1	Pctg. Allowed
Aldrich	1	268	13.76
Antonio	1	112	24.44
Beaver	10	2,473	14.47
Bemis	55	130,808	3.17
Berrick	3	603	16.20
Caldwell	4	607	20.11
Catherine	4	1,027	14.47
Chase	167	56,420	13.55
Eberhardt	2	599	17.20
Faubin	2	553	13.76
Goodrich	9	1,454	23.45
Gorham (Deep)	5	1,299	18.78
Gorham (Oswald)	72	39,491	10.33
Gorham East (Topeka)	3	7,583	3.08
Graber	64	55,405	6.38
Gurney Topeka	1	1,320	4.74
Hall Oswald	25	10,282	9.98
Harbaugh	18	21,367	5.00
Jordon	2	5,391	2.93
Lorraine	93	57,489	7.74
Marshall	5	8,145	4.41
Neidenthal	13	1,656	23.73
Ochs	7	3,143	12.12
Otis South	8	3,653	11.20
Oxford (Stalnaker)	12	901	41.73
Raymond	31	13,689	12.10
Raymond, K.C.	1	351	17.38
Richardson	35	36,591	5.62
Ritz	143	11,549	39.15
Russell, Siliceous	43	27,145	7.70
Russell, Oswald	3	732	14.47
Sellens	18	6,288	13.33
Shutts	7	7,011	7.39
Silica	283	464,684	4.13
Stumps	10	4,772	9.89
Trapp, Topeka	2	1,973	5.62
Trees	5	1,094	18.74
Ubert	1	337	11.83
Victoria	3	997	11.83
Walters, Topeka	1	922	6.01
Wellington	71	35,416	9.70
Wilkins	1	251	19.12
Winget	3	1,603	8.70

Cotton Valley Spacing

With Conservation Commissioner William G. Rankin presiding, the Louisiana Conservation Commission Friday held a hearing in Shreveport, at which it heard a petition from the Ohio Oil Company, United Gas Public Service Company and Magnolia Petroleum Company, largest operators in the Cotton Valley field, Webster Parish, to change the present spacing rule now in effect in there to 1 well to each 160 acres. Land owners in the field, represented by District Judge J. F. McInnis of Minden, asked continuance of the present 40-acre spacing rule for the 8000-foot Bodcaw sand horizon. One land-owner asked that a smaller than 40-acre space rule be adopted for shallower levels of the field.

Spokesman for the three companies owning the majority of the potentially productive territory of the field at present was Roy Benoit, attorney for Ohio Oil Company, which owns 52 percent of the acreage in the present limits of Cotton Valley as defined by shallower wells, the limits of the 8100-foot horizon not yet having been defined. Benoit said operators in the 8100-foot horizon are confronted at Cotton Valley with three main difficulties: high gas-oil ratio, a limited gas market, and what to do with the gas after it is recovered from the ground, in urging the 160-acre space rule. He urged the gas withdrawal be restricted to what can be used and marketed without waste, allowing each deep well to produce whatever quantity of distillate it will make in producing the gas allowable; the allocation of the total gas allowable among the producers of the field on a 75 percent acreage and 25 percent bottom-hole pressure basis, and prohibition of all gas waste in the field. Failure to adopt the 160-acre plan, Benoit said, left three alternatives: First, keep the 40-acre spacing and prohibit waste, which would mean when 100 wells were drilled in the field that with the present market outlet of 35,000,000 feet daily each well would have 350,000-foot daily production; second, keep the 40 acres and allow dissipation of gas in the air; or, third, consider Cotton Valley as a gas field and close it in.

Texas Gasoline Plant Order

The Texas Railroad Commission has issued an order providing for complete reports on all gasoline plants operated in Texas which use sour gas. This is the first order which has been issued in compliance with provisions of the new law enacted by the legislature this spring.

The principal purpose of this order is to furnish the Railroad Commission with complete data which will form a basis of an efficiency report on the plant. This is necessary before the commission can determine what is a fair standard of efficiency to require.

Included in the order were provisions for the following data:

The name under which plant operates; the name of the owner, the name and residence of the individual owner, the names and residences of each partner of the partnership owning such plant, or the name, state of incorporation and official residence of the corporation, and the name and residence of its agent for the purpose of service if a foreign corporation, the location of such plant (section, block, survey, county); the throughput capacity of gas; the type of plant (compression, absorption or combination); the potential volume of sweet gas connected and the potential volume of sour gas connected and a list of the oil wells from which the operator is at the time of the application processing casinghead gas; the gas-oil ratio of each individual oil well connected to the plant, the present disposition of the total residue available, segregated by volumes into the following classifications, with percentage each constitute of total residue shown; extraction loss, returned to leases, plant use, drilling, light and fuel, carbon black, gas lift, repressure, and vented to the air.

The average daily amount of residue gas available at such plant, segregated as to sweet gas, residue, casinghead gas residue and sour gas residue remaining after that loss of gas which is due to the extraction of natural gasoline; the amount of residue gas vented to the air each day, and the method by which the amount of such residue gas is computed; the number of boilers and gas engines located in or used in connection with the operation of such plant; the type and horsepower rating; and the average time operated in hours each day; the total amount of residue gas consumed in such operations; and detailed information as to the residue gas used upon leases.

Texas Field Rules Issued

The Texas Railroad Commission last week issued rules covering operations in 10 horizons of various Texas oil fields.

Forty-acre spacing for wells in the Ordovician horizon of the Sand Hills field in Crane County were provided. These regulations, however, permit wells to be spaced 330 feet from lease lines and 660 feet apart. Thus staggered locations will be permitted in order that additional wells may be drilled at regular intervals should future development prove that spacing provided in this order does not permit the drilling of enough wells to drain the leases effectively.

The rules require 1300 feet of surface casing set "approximately at the base of the salt" and set with 200 sacks of cement. The producing string must be set at least as low as the gas-oil contact.

"When drilling wells to the Ordovician pay zone in the area where the Tubb pay zone is known or thought to be productive, ample provision shall be made to protect the Tubb pay zone from contamination by use of highly viscous mud when drilling from 4200 feet to the point where the oil string is cemented."

The order provides for proration based on 50 percent acreage plus 50

percent potential, with 40 acres as the unit assigned to the well. The acreage allowance will be reduced in that proportion which the unit bears to a full size tract of 40 acres.

The potential is to be determined by a six-hour open flow test using the last four hours as the factor. A maximum gas-oil ratio of 3000/3 is included.

Sand Hills Rules—Permian Horizon

The rules for wells drilled in the Permian horizon of the Sand Hills field, Crane County, permit one well to 17.78 acres. This allows wells to be drilled 440 feet from lease lines and 880 feet apart.

The surface casing must be set and cemented at 500 feet while the oil string shall not be set above a hole depth of 4000 feet, which is approximately 250 feet above the Tubbs sand. The oil string must be cemented 900 feet above the shoe.

The potential is determined by six-hour open flow test with the last four hours used as a base. A maximum gas-oil ratio of 2000/1 is permitted.

The allowable is to be fixed on acreage plus potential with 50 percent weight to each factor. The standard proration unit is 17.78 acres, and smaller units will be given proportionately smaller acreage allowances.

Alta Mesa Field Rules

The commission provided 20-acre spacing for wells in the Garcia sand in the Alta Mesa field in Brooks County, permitting wells to be drilled 466 feet from lease lines and 933 feet apart. Three hundred feet of surface casing is required and the oil string must be set below the top of the producing formation. A 24-hour potential test is provided, taken through one positive one-half inch choke.

Proration is on the basis of acreage plus potential with 50 percent assigned to each factor. The acreage assignment is 20 acres for a well, although an additional five acres may be allowed to eliminate the necessity for drilling two wells on a tract which ranges in size from 20 to 25 acres.

South Calliham Field Rules

Rules for the South Calliham field in McMullen County permit the drilling of one well to 10 acres. This will allow wells to be spaced 330 feet from lease lines and 660 feet apart.

The commission requires 150 feet of surface casing set with 100 sacks of cement. To control the wells while drilling, 10 pound mud is required after the surface plug is drilled. Viscosity of this mud must range from 28 to 42 seconds.

North Cowden Field Rules

Wells in the North Cowden field, Ector County, must be drilled 440 feet from lease lines and 880 feet apart. This regulation was advocated at a recent hearing by all but one of the principal operators in the field.

The rules called for 200 feet of surface casing cemented back to the surface and an oil string set no higher than the top of the lime and set with 75 sacks of cement.

"Said field shall be divided into tracts of 40 acres each. Each producing 40-acre tract shall be a proration unit; each producing tract containing less

[*Continued on page 166*]

Economic Notes

Petroleum substitute research declared broad field . . . Oil recovery stressed by Bureau.

DEVELOPMENT of substitutes for petroleum offers one of the broadest fields of technological research for coming years, despite the fact at present supplies of natural petroleum appear sufficient for a considerable period, it was declared July 18 by the National Resources Committee in a report on Technological Trends and National Policy submitted to President Roosevelt by Chairman Harold L. Ickes.

The 388-page report deals with the new inventions and their social implications, and calls attention to the need for planning to meet the new situations caused by technological advances. Visualizing the possibilities of the next 20 years, the report recommends the establishment of a federal committee to keep abreast of technological changes, and forecast imminent changes that may affect national life, and a series of continuous independent studies to be undertaken by existing planning boards and by appropriate agencies developed by the Federal Government on such questions as gasoline produced from coal and the like.

Substitutes Not Feasible

In discussing substitutes for petroleum, the report pointed out that oil shale at present is too expensive; benzol, now produced at the rate of about 6,000,000 barrels annually, only part of which is available for motor fuel, could supply only about 1½ percent of the United States demand for motor fuel if the entire world production were utilized; and the use of oil from low-temperature coke plants, is not feasible since if all the bituminous coal produced in the country in 1935 had been

[*Continued on page 166*]

Pipe Line News

Large Mid-Continent gasoline line planned . . . Humble enlarging West Texas system.

FOLLOWING a meeting in Oklahoma City on July 8, Anderson-Prichard Oil Company, Oklahoma City; Bell Oil & Gas Company, Tulsa; Cushing Refining & Gasoline Company, Cushing and Rock Island Refining Company, Duncan, Oklahoma, announced their decision to construct a gasoline pipe line which will originate at their respective refineries and terminate in central Iowa.

Preliminary estimates of costs and details of construction are being prepared by Ford, Bacon & Davis, of New York City. Details of size, capacity and other items will not be available until the survey has been completed.

One branch of the new line will probably have its terminus on the Mississippi river. Also under consideration is the extension of the southern terminus of the line at Grandfield, Oklahoma, to Colorado, Texas, to serve the refinery of Coltex Refining Company. Present plans contemplate the line shall originate at Grandfield, Oklahoma, and pass through Beckett, Cyril and Cushing, Oklahoma.

The companies state the construction of the line has been made necessary in order that operation of their plants be continued. Competition from other large lines and continued high railroad freight rates made it apparent construction of the line was the only alternative left the concerns.

Enlarge West Texas Line

Humble Pipe Line Company will enlarge the capacity of its West Texas trunk line unit that extends east from Kemper terminals, near Big Lake field, to Comyn, Comanche County, where connection is made with its North Texas system. Three motor driven centrifugal pumping units are to be added to Ballinger, May and Comyn stations to boost the West Texas capacity from about 50,000 barrels to 60,000 barrels daily. The company has two parallel 8-inch lines, with two short loops, extending from Kemper to Comyn, with a multiple system of 8-, 10- and 12-inch lines from Comyn to Baytown.

Finish Oklahoma Gas Line

Oklahoma Natural Gas Company last week completed its new pipe line system to Enid, Oklahoma, with the total cost placed at approximately $400,000. The system will gather gas from the Marshall, Lovell and Crescent pools of Logan County through a 10-inch line extending from Enid southwest to Marshall and Lovell pools and an 8-inch line into the Crescent pool. Construction of the system was started May 10. Enid had formerly been getting its gas through lines of Consolidated Pipe Line Company, coming from Wheeler County in the Panhandle of northwest Texas.

WEST TEXAS » NEW MEXICO
Permian Basin Number
THE OIL WEEKLY • JULY 19, 1937

West Texas-New Again Is

RESTORATION of West Texas to the leading position on drilling activity and important field discoveries since the stabilization of crude prices and market demand was anticipated by oil leaders. The Permian basin section of the district was amply fortified with undrilled proved locations and favorable wildcat prospects to register an early recovery. The district was heavily penalized on crude market and prices during the five-year period ending last year due to the widespread influence of the prolific East Texas field.

Removal of the East Texas field as an elastic source of crude promptly reflected a healthy demand for all grades of Permian oils. Crude purchasers encouraged drilling in order to create oil supplies in keeping with their demands. This altered policy resulted in major development programs being launched in Winkler, Ward, Upton and Ector Counties, with a gain also enjoyed by other producing counties.

North Part to Front

Since proration is effectively enforced in West Texas, this revived drilling program has not fulfilled the crude requirements of the majors, and search for new fields followed. Leading companies have expended huge sums for the acquisition of wildcat acreage, and to support wildcat projects. All sections of the district have shared in the revived lease play. North portion of the Permian basin has been given preference, as it is slated to become the largest contributor of new fields in view of the fact that isolated pools now entering the development stage have been uncovered in Gaines, Dawson, Yoakum, Cochran and Hockley counties.

Production possibilities of the Permian basin have always been underrated. Prior to the discovery of flowing production from five of the seven widely separated pools in the above counties, the north platform of the basin was generally believed to lack sufficient porosity in the big lime horizon to yield oil in commercial quantities. This belief was predicated largely upon minor oil showings developed from earlier tests in Cochran County. The latter county is now held in high esteem for oil prospecting, with bright outlook for an important field resulting from the discovery of the Duggan pool, situated near the southeast corner. Discovery of the Slaughter field, located to the east in Hockley County, early last spring reveals that the north border of production from the Permian has not been outlined.

Companies and independents that have been skeptical of the north basin oil prospects entered into competitive bidding for lease protection when the Wasson area, located near north line of Gaines County, scored natural flowing production last month on a geophysical prospect. It is on a direct strike between the Seminole area and Yoakum County's 3-well producing area on the Bennett land. The Wasson area is to receive a major drilling program this year, with six rigs running in the immediate area. It will also be a factor in causing one or more trunk lines to be extended into the district.

Covers 21 Counties

Permian production extends into 21 West Texas counties, and has a reputation for yielding fields of major proportions. Until the past year comparatively small number of separate operating units have recognized the opportunities the district offers for acquiring oil reserves and taking a profit on operations. Proration allowables are generally higher per well, thereby offsetting the added cost of an average completion in the Permian lime, and also the abbreviated price posting imposed because the bulk of the oil carries sulphur. Lease protection in wildcat areas is below the average normally paid by prospecting companies. Companies that have built up big reserves in the district, with a great number of proved locations to be drilled in old fields, refuse to bid high prices.

First sustained production from the Permian was discovered October, 1920, near Westbrook, Mitchell County. This development was given no special significance until later years when The California Company, now operating as Standard Oil Company of Texas, acquired the discovery block. The Westbrook field is currently producing about 900 barrels daily, with an accumulated yield of about 7,861,000 barrels through 1936. It is of interest to note that the discovery well is currently pumping 10 barrels of oil daily, and is located near the west edge of the south end of the field.

1923 Saw Drilling Increase

Discovery well of the Big Lake field, first lime test for Reagan County, began flowing by heads May 28, 1923. The latter date marks the beginning of an intensive wildcat drilling program for the basin, although nearly a year elapsed before the most productive section of the field was uncovered. The original well drilled by Texon Oil & Land Company, with controlling interest later sold to Big Lake Oil Company, was also on the southwest edge of the structure. The discovery company resumed active operations when production widened to the east to include University acreage that was excluded from the sale to Big Lake Oil Company, and acting on a hunch held by Frank Pickrell and the late Carl Cromwell, general manager and production superintendent, respectively, drilled a deep test, offsetting Permian production, and proved the Ordovician zone at 8300-8900-foot level for prolific oil and gas flow. The deep strike was made about December 1, 1928, and has retained honors as the deepest producing level in the district.

Three widely separated discoveries in 1925 resulted from the exploration work encouraged by the Big Lake field. Crockett County led offset June 8 when World Oil Company opened the World-Powell field. The discovery block

Mexico District Booming

By H. H. KING, Staff Writer

was sold immediately to Humble Oil & Refining Company and Marland Oil Company (now Continental Oil Company) for $1,400,000,- including $350,000 cash, and the remainder payable from production. The oil payment has not been fully liquidated. Humble Pipe Line Company provided the first trunk line outlet for West Texas in 1925, making first deliveries of Big Lake oil April 18, 1925, and tied into the Crockett County field in August, 1926.

McCamey field, Upton County, was opened September 20, 1925, through the joint efforts of George B. McCamey and the late L. P. Johnston on acreage farmed out by Marland Oil Company. The latter retained one-fourth interest in the well and 320-acre site. About two weeks after the well made its first pumping gauge the independents sold their interest in the discovery and lease of about 730 acres of nearby acreage to Republic Production Company for $500,000, including $200,000 cash. November 20, 1925, marked the entry of Howard County's first production. Fred Hyer et al made the discovery, and in December, 1926, sold the shallow pumper and 1200 acres to Marland Oil Company for $100,000 cash and $150,- 000 payable from production. This strike led to the development of a group of fields within the county.

Practice of making a wildcat strike, then a big sale, was also carried out by the majority of the successful wildcatters in 1926. Production on the east border of Crane County was uncovered by Joe C. Maxwell and Luther Turman et al on the Len Taylor land, H. T. Sapp Survey, late February, 1926. The former sold their 50 percent interest in the well and block the following June to Independent Oil & Gas Company. This area was later proved a part of the McCamey field, although originally considered on a separate geological feature. Production advanced up the Crane County line to University of Texas acreage on April 19, 1926, when Church, Fields, Maxwell, Turman and Pennock Oil Company's University 1 made a pumper at 3040 feet. Magnolia Petroleum Company acquired one-sixth interest and operating control of the well and 40-acre lease and full interest in 1280 acres before the well was completed by paying Church & Fields $150,000 cash and $250,000 payable from production. This area became known as the Church & Fields field. Gulf Oil Corporation provided the first Permian discovery for a major unit in July, 1926, when its J. T. McElroy 1, located 5¾ miles south of the Church & Fields strike, made flowing production from the same lime zone. Later developments linked the two areas.

1926 Banner Year

The year 1926 stands out as the banner period for discovering big fields in the basin. Roy Westbrook and others, influenced by an abundance of leases at a nominal cost, financed a test for west central Winkler County on the Hendrick ranch. Shallow geological markers forecast a failure, and when the test began heading oil July 16, 1926, the companies seeking an opportunity to share in the strike found the discovery group in control of 31,000 acres surrounding the producer. A portion of the acreage was sold to companies, and later in the year Southern Crude Oil Purchasing Company (now Stanolind Oil & Gas Company) made a full interest purchase of leases, and also a joint development contract on the discoverers' remaining acreage. The Hendrick field attained the all-time production record for the district in producing in excess of 6,500,000 barrels during April, 1928, from 153 wells, and was placed on proration May 5, 1928. Other fields have been capable of making this daily yield, if relieved of proration restrictions. The discovery producer was drilled within 3 locations of the west edge of the long structure. It is pumping about 10 barrels of oil with 25 barrels of water daily. The field averages about 98 percent water in producing its allowable of 12,250 barrels daily.

Yates Greatest Discovery

Greatest discovery for the district was recorded October 28, 1926, when Transcontinental Oil Company and Mid-Kansas Oil & Gas Company's I. G. Yates 1 developed natural flow of 450 barrels daily for the northeast portion of Pecos County from sandy-lime at 1004 feet. It was deepened 28 feet in April, 1927, and gauged 2200 barrels, and when carried to 1150 feet in August, 1928, stepped up its rated flow to 70,824 barrels daily. Ability of this shallow zone to break the Nation's crude price structure was evident after the completion of a few additional wells on the discovery block. Large interests held the close-in acreage, and voluntarily production restrictions were adopted October, 1927. Enforcement was shifted to the Railroad Commission on July 1, 1928. Production was stepped up to a maximum flow of 130,000 barrels beginning July 1, 1929, but was cut back to 110,000 barrels daily effective 7 a.m. March 20, 1930, and later reductions followed in the wake of low prices and a shrinkage in market demand. This field has the largest open flow producers, and for proration purposes is given a 24-hour potential rating of 8,042,- 174 barrels from 528 wells. Standard Oil Company of Texas' Bob Reid 3 is the most productive well, having earned a potential rating of 169,374 barrels, based upon brief open flow into lease tanks.

Ector County, most active drilling center in the district, made its entry as a source of production late in 1926 through the efforts of I. S. Cosden Inc. on the W. E. Connell land. This strike was near the west edge of production, and later developments on the drilling block did not brighten the outlook for attractive production. The Texas Company acquired an interest in the project, and recently a full interest. The prolific section of the field was not encountered until October, 1929, through the joint efforts of the late Robert R.

Penn, Humble Oil & Refining Company and Atlantic Refining Company on Texas Pacific Land Trust fee, located several miles east of original production. Ector County has since contributed more than a half dozen large fields, including the Goldsmith area, which is now experiencing a major drilling program, although two years have elapsed since it was proved for flush production.

New Mexico's Play Active

New Mexico's first bid for prominence as an oil producing state arose from the development of the Hobbs field, Lea County, from Permian limestone. The state had

West Texas Discovery Wells

COUNTY AND FIELD	Discoverer and Lease Name	Sur. Elev.	Top Salt	Top Lime	Prod. Horizon	Total Depth	Date Comp.	Initial Prod.	Present Prod.	Oil Gravity
Andrews County:										
Emma	Sinclair Prairie Oil Co.'s Cowden 1	3135	1660	3810	4110–4300	4300	1–10–37	111	Plug.	29–30
					(DD)–4301	4342	3– 4–37			
Fuhrman	Fuhrman Pet. Corp.'s W. T. Ford 1	3186	1753	3875	4290–4564	4613	11–21–30	235	43	25–31
Means	Humble O. & R. Co.'s R. M. Means 1	3166	1920	3845	4307–4472	4472	8– 6–34	251	45	30–32
					(DD)–4527	4527	12–11–34	600		
Ogden (Deep Rock)	Tripplehorn Bros. (was Deep Rock-Atlantic & California Co.'s) C. E. Ogden 1	3206	1750	4050	4345–4428	4428	12–18–29	200	37	26–32
Parker	Honolulu Oil Corp.-Llano Oil Co.'s J. E. Parker 1-A	3104		4179	4615–4731	4780	12– 9–34	153	11	29–30
Walker	Humble O. & R. Co.'s B. S. Walker 1	3220	1775	....	4340–4490	4538	12– 8–34	75	SD	29–30
Cochran County:										
Dugan	Honolulu Oil Corp.-Cascade Pet. Co.-Devonian Oil Co.'s Dugan Bros.	3693	2398	4193	5018–5068	5098	10–29–36	396	50	27–28
Concho County:										
Hartgrove	Ed. Strentz et al (was Arkansas Fuel Oil Co.'s) S. A. Hartgrove 1	1667	....	....	1110–1140	3236	5–20–27	1M gas	....	.....
Crane County:										
Church & Fields	Magnolia Pet. Co. et al (was Church-Fields et al's) University 1	2601	1145	2025	3038–3040	3040	4–19–26	190	Plug.	30–32
Gulf McElroy	Gulf Oil Corp.'s J. T. McElroy 1	2592	1000	2661	2728–2750	2750	7–21–26	600	41	30–32
					(DD)–2830	2830	12– ?–26	750		
					(DD)–2833	2833	2– ?–27	350		
Jordan	H. M. Clark-Cooper & Smith's A. P. Jordan 1	2810	1055	....	3590–3750	3750	2–21–37	94	SD	33–35
McKnight	Gulf Oil Corp.'s M. B. McKnight 1	2879	615	2520	3240–3650	3713	6–31–35	25	8	29–30
Sand Hills	Gulf Oil Corp.-Cranfill Bros.' J. B. Tubb 1	2526	505	2455	4302–4310	4310	10– 9–30	960	17	34–37
					(DD)–	5336	4–18–31	Dry		
					(PB)–4342	4342	1–20–34	99		
Sand Hills (Deep)	Gulf Oil Corp.'s W. N. Waddell et al 1	2554	510	....	5980–6317	6450	2– 5–36	105	30	34–44
Taylor-Hughes	Shell Pet. Corp. (was Phillips Pet. Co. or Independent O. & G. Co.)-Turman & Maxwell's Len Taylor 1	2474	450	2030	2038–2045	2045	2–24–26	140	SD	28–30
Waddell	Gulf Oil Corp.'s W. N. Waddell 2	2744	1170	3068	3194–3479	3500	8–29–27	35	SD	33–35
					(DD)–3479	3519	10–31–27	25		
Waddell (West)	Sinclair Prairie Oil Co.'s University 1, lse 24	2797	1070	3215	3512–3591	3615	4–25–37	345	82	33–35
Crockett County:										
Hoover	R. C. Chambers et al's A. C. Hoover 1	2393	1248	....	1930–2105	2105	Jan. 1933	5	SD	.....
Powell (World)	Humble O. & R. Co.-Conoco (was World Oil Co.'s) L. P. Powell 1	2809	1173	2572	2644–2647	2647	6– 8–25	25	SD	27–32
Shannon	W. W. Donnelly & J. D. Young's J. M. Shannon 1	2486	....	....	1664–1680	1750	10–16–27	10M gas	Plug	.....
Todd (Oil)	Continental Oil Co.'s J. S. Todd 1-A	2530	....	1499	1539–1542	1542	1–17–33	40	Plug	21–22
Todd (Gas)	The Texas Co. (was J. C. Cooke et al's) J. S. Todd 1	2672	1038	....	1695–1705	2102	4–24–26	1M gas	Plug	.....
Dawson County:										
Albaugh	Ray A. Albaugh et al's John Robinson 1	3085	1970	4010	4944–5038	5038	11–27–36	93	SD	32–33
Ector County:										
Cummins	Atlantic Ref. Co.-Cascade Pet. Co. (was C. J. Davidson et al's) H. E. Cummins 1	3204	1570	3755	4267–4509	4509	7–10–34	62	SD	31–32
Foster	Barnsdall Oil Co.'s H. C. Foster 1	2932	1680	3820	4090–4300	4342	12–21–35	264	38	35–37
Goldsmith (Gas)	Landreth Prod. Corp. et al's C. Scharbauer 1	3162	1465	3710	4102–4186	4236	11–18–34	8M gas	....	.....
Goldsmith (Oil)	Gulf Oil Corp.'s C. A. Goldsmith-Scharbauer 1	3112	1518	3745	4170–4175	4175	6–14–35	2000	74	35–37
					(DD)–4210	4210	4–12–37	2076		
Harper	Broderick & Calvert, Inc.-O. C. Harper's E. F. Cowden 1	3033	1620	3543	4147–4338	4338	10–11–33	306	28	36–37
Holt	Sun Oil Co.'s O. B. Holt 1	3108	1618	3650	4053–4194	4350	8– 5–35	25	3	–30
					(DD)–4194	4971	5–31–36	23		
Johnson	Landreth Prod. Corp.'s J. L. Johnson 1	2907	1865	3945	4087–4166	4180	12–30–34	152	23	34–36
North Cowden	Stanolind O. & G. Co. (was Southern C. O. Pur. Co.'s) J. M. Cowden 1	3053	1810	4020	4130–4244	4244	9–10–30	281	80	32–35
					(Shot)–4244	4244	1–16–34	930		
Penwell (Judkins)	The Texas Co. (was J. S. Cosden, Inc.'s) W. E. Connell 1	2847	875	3170	3465–3786	4002	12–28–26	40	SD	32–36
South Cowden	L. C. Harrison & Fred Turner's F. V. Addis 1	2943	1575	....	3846–4061	4061	1–30–33	448	11	31–36
Fisher County:										
Robinson	Southern Oil Corp. of America's Joe Robinson 1	1948	....	....	3502–3505	3505	5–15–37	1000	SD	41–42
Rotan	Tide Water Associated-Merry Bros. & Perini, Inc.'s M. Howard 1	1849	....	....	3672–3674	3677	3– 5–35	175	43	38–39
Royston	The Texas Co.'s Dan W. Stephens 1-A	1937	....	3190	3238–3275	3275	1–17–28	280	20	38–39
Royston (Deep)	Gen'l Crude Oil Co. (was Cranfill-Reynolds Co.'s) Bledsoe-Flannigan 2	1810	....	....	3782–3800	3800	5–10–31	65	PB	39–40
Gaines County:										
Kirk	Landreth Oil Corp.'s W. H. Kirk 1	3271	2047	4021	4796–4820	4820	6–29–36	107	SD	26–28
					(DD)–4850	4870	11–10–36	50		
Seminole (Gas)	W. T. Walsh-Harry Adams et al's S. J. Averitt-Ohio 1	3322	2030	4030	4890–4910	4910	3–15–36	12M gas	Plug	.....
Seminole (Oil)	Harry Adams Corp. (was Amerada et al's) Averitt-Ohio 1-A	3318	2024	4660	4996–5029	5029	11–30–36	214	SD	33–34
					(DD)–5032	5054	12–28–36	234		
Wasson	Amon G. Carter-Continental Oil Co.'s A. L. Wasson 1	3549	....	3830	4800–4959	4959	6–19–37	333	150	34–35
Garza County:										
Justiceburg	Emerald Oil Co. (was B. V. Blackwell et al's) J. M. Boren 1	2358	470	1665	1970–2002					
					2417–2449	2600	5–..–26	5	SD	37–38
Post	M. L. Richards et al's J. R. Sullivan 1	2734	920	2317	2705–2730					
					2800–2936	2974	7–26–35	25	SD	35–36
Glasscock County:										
Carter	F. C. Dodson-B. A. Duffey's J. G. Carter 1	2613	....	2370	2623–2664	2669	10– 8–36	85	12	29–32
Settles (Shallow)	Continental & Group 1 Oil Corp. (was Marland & Texon's) W. R. Settles 1	2646	....	2030	1235–1298	3504	3– 8–27	200	24	32–33
World-McDowell	World Oil Co.'s L. S. McDowell 1-C	2530	....	2260	2351–2398	2440	4–28–29	250	20	26–27
Hockley County:										
Slaughter	The Texas Co. et al's J. E. Guerry-Slaughter 1	3560	....	3840	4980–5023	5030	4–28–37	502	150	30–31

(Table Continued on next page)

previously added minor producing areas in Eddy and San Juan counties, but the output of each was absorbed by local refineries and limited tank car shipments.

Hobbs field was discovered November, 1928, by Midwest Refining Company, later absorbed by Stanolind Oil & Gas Company. Development was restricted because of the isolation of the area from pipe line and rail facilities. Five producers were added in 1929. The prolific section of the field was tapped in January, 1930, when a northwest outpost test by Humble Oil & Refining Company on the Bowers permit gauged 464 bar-

West Texas Discovery Wells (Continued)

COUNTY AND FIELD	Discoverer and Lease Name	Sur. Elev.	Top Salt	Top Lime	Prod. Horizon	Total Depth	Date Comp.	Initial Prod.	Present Prod.	Oil Gravity
Howard County:										
Chalk	Magnolia Pet. Co. (was Owen-Sloan et al's) Otis Chalk 1-A	2430	....	....	1578–1583	1586	4–18–26	70	5	31–32
Clay-Heyer	Continental Oil Co. (was Marland or Fred Hyer et al's) H. R. Clay 1	2630	....	....	1542–1562 (DD)–1791	1562 1794	11–20–25 1– 9–27	60	5	31–33
Harding	Conoco-Group 1 Oil Corp. (was Marland-Texon's) J. B. Harding 1	2502	1146	3125	3173–3188	3230	5–17–27	140	10	28–29
Hyman	Magnolia Pet. Co.'s Minna Hyman 1	2370	....	....	1308–1317	1317	6–17–23	40	2	31–32
Lockhart-Scott	Lockhart Bros. et al's W. T. Scott 1	2359	....	....	2740–2820	3220	12–27–26	20	Plug	29–30
O'Daniel	Magnolia Pet. Co. (was Choate-Henshaw's) M. H. O'Daniel 1	2232	....	1670	2640–2705	3103	5–12–26	65	4	26
Roberts (Deep)	Magnolia Pet. Co.'s Dora Roberts 1	2662	....	....	2956–2968	2990	10–24–27	3000	28	25–31
Settles-Henshaw	American-Maracaibo Co. (was Henshaw Oil Corp.'s) W. R. Settles 1-A	2708	....	2001	2208–2210 (DD)–2230 (DD)–2248	2210 2230 2248	8– 7–28 10– 5–28 11–28–28	1200 4220 5232	SD	28–32
Synder	Moore Bros. Corp.'s T. P. Land Trust 1	2301	....	1765	2700–2900	2900	5–22–37	213	80	30
Irion County										
Mertzon	Irion Co. Drl. Co. (was Chas. Denny-W. R. Andrews or R. E. Moore-M. Kenedy's) F. Tankersley 1	2283	....	....	1341–1344	1344	7–22–28	15	Plug	37–39
Jones County:										
Avoca	Iron Mountain Oil Co.-Humble O. & R. Co.'s Carl Olander 1	1560	....	....	3241–3249	3250	7– 6–37	5040	SD	38–39
Condor-Sayles	Condor Pet. Co.'s H. Sayles 1	1640	....	....	1914–1915	1915	12–22–32	300	10	37–39
Guitar	R. B. Farris, L. Fikes, Ungren & Frazier's Guitar Trust 1	....	....	....	1990–2001	2001	10–11–36	108	44	37–43
Hawley	Sinclair Prairie Oil Co. (was F. E. Shaheen & Prairie O. & G Co.'s) S. W. King-Dorsey 1	1652	....	....	1994–1999 2210–2213	1999 2213	8– 7–30 7–..–36	75 615	60	37–44
Higgs	Roeser-Pendleton, Inc. (was Stebbins O. & G. Co.'s) J. M. Higgs 1	1624	....	....	1599–1611	1615	4–22–27	25	Plug	36–38
Lewis	Fain-McGaha Oil Corp.'s Claude Lewis 1-A	1580	....	....	1914–1932	1932	4–21–37	82	16	37–39
Leuders	Bridwell Oil Co.-L. Fikes (was R. B. Farris-Fikes et al's) J. W. Jennings 1	1580	....	1225	2038–2041	2041	7–19–35	1027	25	37–39
Noodle Creek	Phillips Pet. Co.'s Joe Winters 1	1908	....	2493	2518–2527	2527	9– 5–26	1000	SD	38–40
Noodle Creek (Deep)	Continental Oil Co. (was Marland Oil Co.'s) Harris 2	1909	....	....	3036–3039	3039	2–13–27	125	Plug	33–34
Smith-Tiner	Roberts Oil Corp. (was Hutson-Weaver & Shaheen's) A. T. Smith 1-A	1824	....	....	2498–2533	2533	1–20–28	75	SD	38–40
Sandy Ridge	Sandy Ridge Oil Corp. (was J. P. Byram's) P. Jones 1	1688	....	....	1930–1935 (DD)–1943	1935 1943	10–20–34 4– 5–35	100 55	38	37–38
Spurrier	N. H. Martin & Son's M. & E. B. Spurrier 1	....	....	....	1925–1932	1932	7– 7–36	72	SD	37–39
White	Oil States Explo. Co. (was Merry Bros. & Perini, Inc.'s) J. H. White 2	1720	....	....	2329–2339	2339	12–31–36	107	8	37–39
	Oil States Explo. Co. et al's J. H. White 2-B	1707	....	....	1742–1751	1752	6–23–37	190	24	37–39
Loving County:										
Mason	Michigan O. & G. Co. (was Mason Oil Co.'s) M. Kyle 2	3053	....	3667	3895–3903	3903	1–20–37	347	100	38–40
??	Lewis-Slagel Drl. Co.'s L. D. Cartwright-Henderson 1	2901	585	1769	3175–3180	3182	7–26–31	35	Plug	40–41
Wheat	Sinclair Prarie Oil Co. (was Lockhart & Co. or P. V. Pet. Co.'s) J. J. Wheat 1	2645	772	....	4212–4233 (DD)–4233 (Shot)	4272 4718	9– 1–25 5–21–27 2– 5–28	25 SD 107	10	38–39
Menard County:										
Callan	W. C. Barnett et al's Callan City Co. 2	....	....	....	1267–1268	1268	12–15–29	1M gas	Plug	.....
Mitchell County:										
Iatan-East Howard	Magnolia Pet. Co.'s Mary Foster 1	2342	....	1750	2858–2872	2872	8–18–25	150	11	25–30
??	Simms Oil Co.'s I. L. Ellwood 2	2237	....	....	598– 606	606	3–29–29	4½M gas	Plug	.....
Westbrook	Standard Oil Co. of Texas (was Underwriters Prod. & Ref. Co.'s) T. P. Land Trust-Abrams 1	2122	....	1540	2350–2498 2970–3020	2498 3050	Oct. 1920 6–14–24	25 75	10	24–26
Pecos County:										
Masterson	Gen'l Crude Oil Co. (was Cranfill-Reynolds Co. & M. Warner's) J. Masterson 1-A	2425	....	....	1249–1462	1495	12–16–29	40	SD	27–28
Netterville	Tex.-Mex. Pet. Corp.'s G. W. Walling-Netterville 1	2444	....	1995	2210–2291 2400–2410	2291 2459	9–25–34 2–14–36	40 25	20	33–35
Pecos Valley	Richard Cochran and Pecos Crude Oil Pur. Co.(was Pecos Valley Oil Co.'s) Fee 1	2501	1115	....	1626–1628 (DD)–1641	1628 1641	11–20–28 6–25–29	120 25	SD	33–34
Pecos Valley (South)	R. P. Dorian et al (was McCarty Oil Co. or Quinby Oil Co.'s) E. W. Bennett 2	....	....	....	1196–1230 (DD)–	1230 1457	Jan. 1927 Feb. 1928	25	Plug	37–38
Richard-Courtney	Phillips Pet. Co.'s Courtney-Pryor 1	2951	....	....	1345–1367 (DD)–1375	1367 4376	5–22–29 10–10–29	150	Plug	25–26
Rowan-Tong	Rowan-Tong, Inc.-Independent O. & G. Co.'s J. A. McDonald 1	2484	725	1400	1605–1606 (DD)–1612	1606 1612	9–18–29 10– 8–29	858 175		28–29
Taylor-Link	Lee Pet. Corp. (was Taylor Link Oil Co.'s) University 1	2510	835	1375	(DD)– 1613–1628	1644 1628	11–15–29 6–20–29	Plug 130	3	29–32
Taylor-Link (South)	Illinois Oil Co. (was Buell-Hagan's) University-Sun 1-B	2760	940	....	(DD)– 1320–1332 (Acid)	1635 1332 1332	9– 4–29 6–22–29 10–18–35	105 20 205	SD	25–26
Toberg	Cardinal Oil Co. (was G. D. Morgan et al's) F. E. Toberg 1-A	2312	....	....	355– 357 (DD)– 382	370 382	8–24–29 1– 6–30	15 450	SD	21–23
White & Baker (Oil)	Gulf Oil Corp.'s White & Baker 3	2780	....	1335	1824–1826 (DD)–1926	1826 1926	12–31–34 7–22–35	50 65	Plug	31–32
White & Baker (Gas)	Alexander-Lyles-Eastland Oil Co.'s White & Baker 1	2672	814	1602	1611–1626	1856	11–24–28	3½M gas	Plug	.....
	Cardinal Oil Co.'s White & Baker 1, Lse. 2	2713	....	1640	1540–1775	1790	6–12–35	11M gas	....	.....
Yates	Ohio Oil Co.(was Transcontinental Oil Co.-Mid-Kansas O. & G. Co.'s) I. G. Yates 1	2396	....	990	995–1004 (DD)–1032 (DD)–1150	1004 1032 1150	10–28–26 4–15–27 8–18–28	450 2200 70,284	58	28–30
Yates (South)	Texon Oil & Land Co. (was K. Kimberlin & Texon's) I. G. Yates 1	2250	460	....	1268–1273	1300	2– 8–27	15	Plug	29–30
??	Geo. H. Anderson, Tower-McKanna, Inc.'s University 1	2801	1030	1690	1960–1963	1998	1–20–29	7¾M gas	Plug	.....
??	R. D. Webb et al's Fee 1-A	....	....	....	465– 472	472	7–28–29	6M gas	Plug	.....
Reagan County:										
Big Lake	Big Lake Oil Co. et al (was Texon Oil & Land Co.'s) University 1	2724	....	2935	3020–3028	3028	5–28–23	80	5	37–39

(Table Continued on next page)

rels per hour at 4106 feet. A drilling boom immediately followed the completion of this well. Three majors invaded the field with trunk line extensions from West Texas, and were prepared for a siege of unrestricted flow. Operators voluntarily placed proration in effect, with the approval of state authorities. Restrictions were applied July 10, 1930, and have continued in this and other Lea County fields that followed. Proration has been adhered to by all operators.

Annual crude yield of the Hobbs field reached a peak level of 12,735,000 barrels in 1931, and has

West Texas Discovery Wells (Continued)

COUNTY AND FIELD	Discoverer and Lease Name	Sur. Elev.	Top Salt	Top Lime	Prod. Horizon	Total Depth	Date Comp.	Initial Prod.	Present Prod.	Oil Gravity
Reagan Co.—Cont.										
Big Lake (Ordovician)	Group One Oil Corp. (Texon's) University 1-B	2733	1110	2780	8500–8523 (DD)–8671	8523 8671	12– 1–28 9–..–32	500	Plug	44–60
Grayson (Skelly-Utah)	Skelly Oil Co.-Utah Southern's University 1	2874	1340	3065	3135–3154	3157	2– 6–28	60	20	32–33
??	Dobbs Oil Co.'s W. E. Friend 1	2669	1180	2285	2325–2450	2464	7– 9–35	15	Plug	37–38
Runnels County:										
McMillan	Vacuum Oil Co. et al (was F. Yates, Lou Ladd, Ed. Hill et al's) R. M. McMillan 1	1726	....	....	2535–2540	2540	8–27–27	150	Plug	43–44
??	Roberts Oil Corp. (was Robt. Watchorn O. & G. Co. et al's) J. L. King 1	1660	....	....	3475–3485	3732	5– 3–28	3M gas	Plug	Plug
Schleicher County:										
Cooper	John M. Cooper et al (was Geo. T. Wilson's) Bert Page 1	2270	....	....	5399–5560	6257	10–15–35	13¾ M gas	....	.....
Scurry County:										
Ira (Northwest)	Coffield & Guthrie, Inc. (was Northwest Co. or Loutex Corp.'s) J. J. Moore 1	2314	....	1580	1765–1820	3576	11–29–23	50	2	23–28
Sterling County:										
??	J. P. Williams et al (was H. D. Rummel et al's) L. T. Clark 3	2337	....	....	1173–1175	1175	6–..–26	20	Plug	31–32
Taylor County:										
Tye	J. B. Dunigan-Fred Hyer et al's T. A. French-Hunter 1	1867	....	....	2389–2391	2391	10–10–29	150	SD	39–40
??	Clarco Oil & Ref. Co. (was Abilene-Texas Pet. Co.'s) J. C. High 1	....	....	....	1990–2025	2130	Feb. 1935	11	3	37–39
??	L. Dunn & H. McAlister's M. Bowles 1	1773	....	....	1750–1752	1752	4–27–37	3	SD	37–39
Terrell County:										
??	Ohio Oil Co. (was Transcontinental Oil Co.'s) M. H. Goode 1	2405	....	....	5606–5612 (DD)–	6120 9140	Mar. 1931 3– 8–37	6¼M gas Plug	Plug	.....
Upton County:										
Hurdle	F. W. Merrick, Inc. (was 'Brewer & Smith's) Cordova Union 1	2515	....	1950	2070–2072	2072	6–12–36	374	32	24–27
McCamey	Republic Prod. Co. (was Johnston & McCamey' and Marland's) J. H. Baker 1	2613	590	2083	2161–2193	2193	9–30–25	70	4	24–30
Web-Ray	Web-Ray Oil Co.'s Cordova Union 1	2576	....	1970	2061–2125	2125	11–19–35	309	16	26–27
Wentz-Shirk (McCamey)	T. P. Coal & Oil Co. (was L. H. Wentz et al's) M. Shirk 1	2722	695	2146	2272–2331	2331	9–30–26	250	Plug	26–27
??	R. H. Henderson-Basin Oil Properties' A. J. Herrington 1-A	3112	....	1995	2815–2825	2825	5–19–37	526	100	24–25
Val Verde County:										
??	O. O. Owens et al's H. Y. J. Mills 1	2130	....	....	2491–2520	6220	6–29–27	3M gas	....	.....
Ward County:										
Bennett (South Ward)	Atlantic Ref. Co.-Penn. Oil Co.'s J. B. Bennett 1	2581	....	2175	2348–2572	2621	10–10–29	278	12	34–35
Dobbs (South Ward)	Wm. E. Housel et al (was Dobbs Oil Co.'s) A. F. Bray-Gulf 1	2465	....	1905	2551–2563	2563	1– 8–36	152	6	36–37
Estes (Deep)	Tide Water Associated Oil Co. (was Simms Oil Co.'s) Johnson 1	2583	....	....	2910–2927	2932	6–23–34	30	21	36–37
Grand Falls (South Ward)	Alpine Oil & Development Co.'s J. F. Boogher 1	2443	760	....	2120–2150 (DD)–2150	2150 2508	10–14–29 Apr. 1930	24 25	SD	34–35
Gulf-O'Brien (North Ward)	Gulf Oil Corp.'s G. W. O'Brien 4	2657	1290	2350	2600–2631 (DD)–2773	2631 2773	4–12–29 10– 8–36	1500 1452	61	32–36
Magnolia-Sealy (North Ward)	Magnolia Pet. Co.'s Geo. Sealy 1	2704	2090	2700	3036–3065 (Acid)–3065	3065 3065	11–24–30 1– 2–37	70 101	22	28–29
Monroe (Barstow)	Plains Prod. Co. et al (was Shipley Oil Corp.-D. H. Byrd-H. A. Harmon's) Lee Monroe 1-A	2655	2485	4630	4663–4666 (DD)–4673	4666 4673	11–21–31 1–30–32	100 40	24	38–39
Prairie-Sealy	Sinclair Prairie Oil Co. (was Prairie O. & G. Co.'s) J. Sealy 1	2666	1073	3100	2526–2575	3505	2– 2–29	3M gas	....	.....
Shipley (South Ward)	Shipley Oil Corp.'s S. F. Hayzlett 1	2502	727	2380	2480–2481 (DD)–2506	2481 2506	11– 2–28 5– 7–29	125 175	SD	35–36
??	C. H. Mahres-Kenneth Slack's Pat Wilson 1	2667	....	5036	5083–5085	5085	.....	Testing	....	.....
Winkler County:										
Bashara	M. J. Bashara & Sons' Fee 2	2885	1163	2306	3043–3087	3087	1–27–30	50	2	34–35
Bolin (now Kermit)	T. J. Jefferies et al (was V. T. Bolin's) Brown-Altman 1	2847	1302	....	2745–2812	3211	7–19–28	25	1	36–37
Brown-Altman (North Kermit)	J. O. Fox, W. E. Butler et al's Brown-Altman 1	2841	....	2310	3110–3204	3204	3– 9–35	100	5	34–36
Emperor	Emperor Oil Co.'s S. M. Halley 1	2764	1260	2442	2824–2886	2886	10– 3–35	75	34	32–34
Halley	Skelly Oil Co.'s S. M. Halley 1	2735	1311	2465	3105–3112	3112	9–12–34	387	25	31–32
Henderson	Uscan Oil Co.-R. H. Henderson's J. B. Walton-Humble 1-A	2873	....	2658	3034–3049	3049	4– 6–36	2306	50	28–36
Hendrick	Stanolind O. & G. Co.-Westbrook-Thompson Holding Corp. (was R. A. Westbrook & Co.'s) T. G. Hendrick T-67-1-A-1	2826	1920	2675	2524–2525 (DD)–2529 (DD)–2965 (DD)– (DD)– (DD)– (DD)–	2525 2529 3004 3011 3023 3032 3049	7–16–26 8– 3–26 11– 7–26 12–29–26 2– 5–27 3–14–27 3–28–27	30 57 125 204 210 400 400	8	27–28
Hill	Sid W. Richardson's M. J. Hill 1	2755	1050	2255	3132–3155	3846	2–23–35	30	10	27–29
Keyes (now Kermit)	Monday Oil Co.-Bert Fields (was W. Keyes-Cherry & Fields') Abilene State Bank-Conoco 1	2870	....	....	2821–2878	2878	3– 5–36	660	29	34–36
Keystone	Gulf Oil Corp.'s Keystone 1	2942	970	2090	3185–3500 (DD)–3520 (Shot)–	3500 3520 3520	7–10–35 7–28–35 1– 7–36	100 275 984	51	34–37
Keystone (West)	Sun Oil Co.'s Keystone 1	2927	910	2386	3291–3391	3456	11–21–35	247	54	37–38
Leck	Atlantic Ref. Co. et al (was Gibson-Johnson-Kessler & Logan's) L. Daugherty 1	2883	1980	2687	3159–3164	3167	5– 9–28	4000	44	27–30
Richardson-O'Brien	Sid W. Richardson-Frank Kelsey & Magnolia's G. W. O'Brien-Edwards 1	2722	2035	2648	2805–2975	2975	10–15–28	2100	16	32–34
Sayre (now Kermit)	Sayre Oil Co.'s J. F. Howe 1	2866	....	2470	2820–2875	2875	10–10–34	564	28	35–38
Scarborough	Shell Pet. Corp. & Llano (was Llano Oil Co.'s) W. F. Scarborough 1	2954	1115	2661	2980–3332 (WO)	3447	10–19–27 12– 8–36	40 60	22	30–36
Yoakum County:										
Bennett	Honolulu Oil Corp.-Cascade Pet. Co.'s L. P. Bennett 1	3557	2535	4661	5088–5096 (DD)–5264	5096 5282	9–28–35 4– 6–36	No test 235	 75	 33–35

been progressively pinched back to share market outlets with other fields within the county.

Original discovery for Lea County was made in July, 1926, when Maljamar Oil & Gas Corporation's Baish permit, located in the western portion of the county, developed commercial production from the Permian at 4100 feet. The company controls the productive area, and has drilled 10 producers.

First evidence that Permian production in West Texas would extend into southeastern Lea County was gained from The Texas Company et al's Rhodes 1, 22-26s-37e, which showed for a big gasser with spray of distillate from sandy-lime at 3213 feet. It was completed in October, 1927, and when provided with a market for the gas was converted into an oil producer. Oil yield from this well is in excess of 100,000 barrels. However, other tests that followed have been gassers. Empire Oil & Refining Company's State 1-B, NE NE NW 8-21s-35e, third oil discovery for Lea County, also failed to expand into a field of any consequence, although it pumped 85 barrels initial in September, 1928.

Banner year for discoveries in Lea County was in 1929. Skelly Oil Company uncovered the Jal lime area in January. Marland Oil Company (now Continental Oil Company) and The California Company, joint owners of federal permits, registered oil strikes in the Eunice and Eaves fields. The Texas Company opened the Lynch-Lea area in March, and Texas Pacific Coal & Oil Company proved the Lynn area for its first oil production in October. Vacuum Oil Company, now absorbed by Magnolia Petroleum Company, and R. H. Henderson, Dexter et al each proved new oil areas to the northwest of existing fields.

The Monument field was given its first oil production by Amerada Petroleum Corporation in 1935, but exploratory work has since linked it with the original Eunice field.

Development of oil production from sandy lime belt up the east portion of Lea County is largely a trend play from similar type of production in Texas. North of the Rhodes discovery, R. H. Henderson et al's Langlie 1 (now operated by Anderson-Prichard Production Corporation), Amon G. Carter et al and N. G. Penrose-Rowan-Nichols Oil Company each made discoveries in 1935. The trend was extended further north in 1936 by Barnsdall Oil Company, and the interval between the Penrose and Mattix areas was shortened by the completion of Skelly Oil Company et al's Harrison 1.

New Mexico Discovery Wells
(All Fields in Lea County)

Field	Discoverer and Lease Name	Sur. Elev.	Top Salt	Top Brown Lime	Prod. Horizon	Total Depth	Date Completed	Initial Production	Present Prod.	Oil Gravity
Cooper	General Crude Oil Company Magnolia Pet. Co.'s A. E. Meyer 1, NEc SE 22-24s-36e	3340	1312	2968	3175–3438	3438	8–15–29	70 Mil. ft. gas	....	.....
Eaves (Gas)	Continental Oil Company et al (was Marland-California Co.'s) J. S. Eaves 1, SW SW SE 19-26s-37e	....	....	....	3501–3508	3508	4–21–34	.....	85	29–30
Eaves (Oil)	Continental Oil Company et al (was Marland-California Co.'s) McCallister 1-A, SW SW SE 24-26s-36e	2960	1173	2620	2905–3002	3002	Dec., 1928	42 Mil. ft. gas	....	.....
Eunice	Continental Oil Company et al (was Marland-California Co.'s) Lockhart 1-B-31, NE NW NW 31-21s-36e	2941	1565	2927	3210–3255	3304	9–13–29	45	14	27–32
Hardy	Barnsdall Oil Co.'s DC Hardy 1, C SE NE 29-21s-37e	3628	1785	3330	3805–3990	3990	3– 9–29	275	85	32–35
Hobbs	Stanolind O. & G. Co. (was Midwest Ref. Co.'s) State 1, NEc 9-19s-38e	3470	1290	....	3701–3800	3800	3–27–36	250	40	35–38
Hobbs (Shallow)	Tide Water Associated Oil Co.'s State 1, SE SE NE 14-18-37e	3606	1690	....	4055–4220	4245	11– 8–28	736	56	34–36
Jal	Skelly Oil Co.'s Joyner 1, NEc SE 26-253-36e	3689	1734	....	3353–3359	4368	12–30–35	10	6	39–40
Langlie	Anderson-Prichard Oil Corp. (was R. H. Henderson et al's) P. J. Langlie 1, C SE SE 8-25s-37e	3029	1125	2992	3248–3331	3339	1–30–29	600	41	27–32
Lynch	The Texas Co. et al's B. Lynch 1, NW SE 34-20s-34e	3162	1205	2700	3332–3470	3485	Sept., 1935	50	76	35–38
Lynch	The Texas Co.'s J. S. Lea 1, SWc NW 14-20s-34e	3749	1760	3340	3722–3731	3731	3–31–29	1200	85	27–31
Lynn (Henry)	Continental Oil Co. et al (was Marland-California Co's. Lynn 1, NWc SE 26-23s-36e	3665	1680	3310	3556–3579	3688	9– 5–34	88	40	37–38
Lynn (Henry)	T. P. Coal & Oil Co.'s State 2-A, NWc SW 21-23s-36e	3344	1450	2790	3007–3650	3930	3– 8–29	30 Mil. ft. gas	....	.....
Maljamar	Maljamar O. & G. Corp.'s M. E. Baish 1, NEc 21-17s-32e	3416	1560	3255	3705–3712	3712	10–13–29	500	50	28–29
Maljamar (Shallow)	Maljamar O. &G. Corp.'s M. E. Baish 5, C SW NE 21-17s-32e	....	....	....	(DD) 3757	3819	3– 2–30	322	....	.....
Mattix	Amon G. Carter et al's G. H. Mattix 1, C SE NW 3-24s-37e	3988	950	2515	3920–4124	4140	7–16–26	100	41	38–40
Monument	Amerada Pet. Corp.'s State 1-D, C NW NW 1-20s-36e	4036	....	....	2362–2368	2371	12–12–35	90	60	38–39
Penrose	N. G. Penrose & Rowan-Nichols' Will Cary 1 C NW SW, 22-22s-37e	3258	1225	2547	3574–3885	3913	7–19–35	43	25	35–38
Rhodes	The Texas Co.-Amerada-Columbian Carbon's W. H. Rhodes 1, SE NE NW 22-26s-37e	3590	1160	2590	3850–3920	3929	2–23–35	900	87	32–35
Skelly	Skelly Oil Co. Unit's B. F. Harrison 1, C NW SW 5-23s-37e	....	....	....	(DD) 3946	3954	3–16–35	3600	....	.....
Vacuum	Magnolia Pet. Co. (was Vacuum Oil Co.'s) State-Bridges 1, C of W line 13-17s-34e	3353	....	2458	3520–3555	3555	12– 9–35	200	85	35–38
West Eunice	Empire O. & R. Co.'s State 1-B, NEc NW 8-21s-35e	2988	1140	3010	3213–3213	3213	10–31–27	120	55	39–40
Unnamed	C. A. Fisher & H. W. Lowrie's State 1, NEc NW ¼ 11-18s-36e	3352	1280	2750	3620–3762	3762	2–15–36	125	33	37–38
Unnamed	Empire O. & R. Co. (was R. H. Henderson & Dexter's) Jewett-McDonald 1, SE c 18-20s-34e	4019	1762	4330	4602–4900	4900	7–29–29	177	85	35–36
Unnamed	Jim W. Brown-Reynolds et als Parcell-Conoco 1, C NW SE 8-21s-38e	3640	1870	3255 3780	3826–3835	3835	9–11–28	85	Plug.	32–35
		3806	2065	4465	5148–5171	5505	7– 9–30	50	Plug.	35–36
		3631	1505	3163 3455	3522–3587	3612	6–12–29	66	19	34–35
		3573	....	....	4371–4391	4401	4–1937	10	SD	27–28

Permian Basin Crude Reserves Increasing

By H. H. KING, Staff Writer

THE Permian Basin, embracing 21 of the oil producing counties in West Texas and a portion of Lea County, New Mexico, has enlarged its recoverable crude reserve nearly every year since recording its first 1,000,000-barrel annual production level in 1924. The comparatively few years that failed to yield adequate new fields to offset crude withdrawals compensated matters through the development of new oil horizons and major extensions to established fields.

Reserves Rank High

The Permian Basin is credited with having produced 899,542,000 barrels of oil to the close of 1936, with 786,911,000 barrels, exclusive of Delaware and Pennsylvanian horizons, from West Texas fields, and 112,631,000 barrels contributed by New Mexico. This bi-state district affords ample support for its widespread development program with an aggregate of 1,790,512,000 barrels as its estimated crude reserve, or an ultimate recovery of 2,690,054,000 barrels. Its reserves are approximately 14 percent of the nation's. Texas' share of the basin's crude reserves accounts for 1,265,843,000 barrels, leaving 524,669,000 barrels to come from Lea County.

Production from the Permian in West Texas and New Mexico is on closely related trends, with one field overlapping the state border, while an eastern Lea County wildcat producer forecasts the possibility of a second joint field. The two sections share the same market outlets, and with few exceptions Lea County producers have holdings in the Texas portion of the basin.

New discoveries and development of oil fields of major proportions from sparsely explored producing areas can be safely forecasted for the Permian Basin section of West Texas. The district has repeatedly responded to properly directed wildcat exploration since the proving of production trends, and is destined to enhance its position as a major crude reserve through the development within and between seven pools uncovered during the past two years in five counties situated north of outlined fields. Oil production possibilities of this so-called north platform of the West Texas basin has been adequately recognized by experienced operators for more than a year through lease and royalty acquisitions.

Additions to crude reserves in West Texas have occurred at frequent intervals since the advent of the Big Lake field, first Permian lime area to contribute prolific natural flowing wells.

Yates Largest Reserve

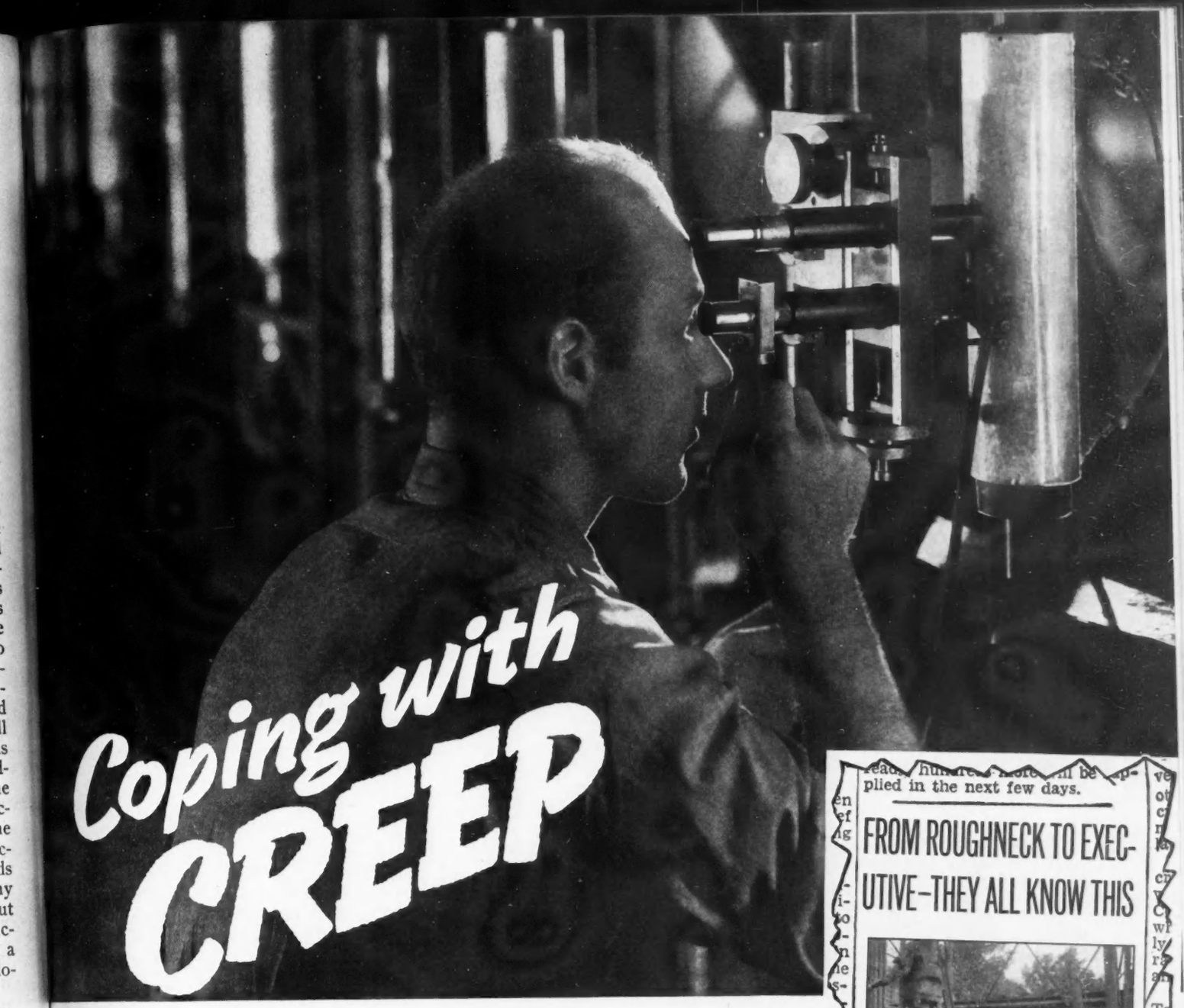
Greatest inducement for wildcat operations arose from the Yates shallow sand and lime field, Pecos County, as its spectacular wells stressed the importance of the Permian as a source of profitable production. No field in the district has approached the records attained by the Yates area, which had produced 223,313,347 barrels of oil to the close of 1936, and is expected to eventually yield about 675,000,000 barrels from known producing horizons within the 18,900-acre area. Voluntary and later state-supervised proration restrictions have been imposed upon the Yates field since it attained major proportions.

Hendrick field, Winkler County, holds second position by a wide margin as an oil source for the Permian, having produced about 184,920,000 barrels to the close of 1936. It has been on production 11 years. Wells in this field are averaging about 98 percent water. They are expected to yield an additional 11,000,000 barrels, providing crude prices make it possible to continue handling such a large volume of water.

A single structure, centering near the east line of Crane County, affords sharp contrast in method of development. This area, originally called the Church & Fields field, and following progressive extensions to the southwest, added the names of Gulf-McElroy and McClintic. The entire area produced about 99,000,000 barrels to the close of 1936, and has a projected ultimate recovery of about 190,000,000 barrels. The Church & Fields sector, situated on royalty lands of the University of Texas and the state school fund, was exposed to intensive development and withdrawals and contributed 60,900,000 barrels of the total yield, and is currently on a marginal well basis. Gulf Oil Corporation holds lease on solid block of sections adjoining Church & Fields on the south and extending to the McClintic sector, with wells in the north row of sections spaced according to the Church & Fields development plan. This company is maintaining a conservative but steady drilling program on its McElroy holdings, and will require a long period to drill its proved locations.

The greater McCamey field, centering upon southwestern Upton County, with an overlap in Crane County, stands out as an important oil supply even though it was deserted by numerous companies before the introduction of acid placed a higher value on this dolomite zone. Early development was supported by the highest crude prices given the district, and when excess supplies of oil broke the price structure the McCamey field was among the hardest hit by reason of small yield per well. Independents took the initiative in reviving field work when acid treatments proved successful, and have since greatly expanded the producing area and have also restored abandoned leases to profitable operation. This field has produced about 31,197,000 barrels of oil, and will probably yield an additional 28,800,000 barrels.

The sandy-lime oil and gas belt, extending along a northwest trend from the Grand Falls area, south



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Ward County, across Winkler County, and deep into the east part of New Mexico, has greatly bolstered crude reserves for the Permian basin, although it was originally termed a "trashy sand" area of little merit. It is the longest related production trend in the district. Production opportunities have been evident for nearly a decade, but its importance as an oil source was not generally recognized until the past two years. The original strike along this trend was the Scarborough field, northern Winkler, followed by minor completions near the town of Kermit and east of the Hendrick lime field. The south end production arose from the discovery of the Shipley field followed by the Gulf-O'Brien and Grand Falls areas, with the Estes strike virtually closing the gap for production in Ward County. Few of the original lease owners in the Scarborough field elected to drill, thereby enabling independents to take possession on farmouts. Discovery of the Sayre, Keyes and Brown-Altman fields, situated in the order named immediately south of the Scarborough field, provided Winkler County with a major oil area, which is now designated as Kermit, with a forecasted reserve of about 79,370,000 barrels. Development of the Halley and Emperor fields in southern Winkler County accounts for an additional 13,790,000-barrel reserve.

Ector County Prominent

Ector County occupies a prominent position in respect to crude supplies, having three distinct fields that are of major proportions. The Goldsmith field, now the busiest drilling center in the district, is destined to approach the 100,000,000-barrel level on recovery, providing owners of large leases speed up their drilling programs so as to cover all proved locations before the flush yield is exhausted some years hence. Lease owners forecast an ultimate recovery of about 10,000 barrels of oil per acre average. Development did not attain important proportions until last spring, although the structure recorded a gas-distillate producer in November, 1934, and a 2000-barrel well in June, 1935.

Judkins-Penwell field, Ector County's first production, has not defined its south limits, even though it has been producing since December, 1926. Original tests on the discovery block were of small caliber, and best production was uncovered later on the east half of the structure. Absence of normal development on the west side, even though capable of yielding small wells will give the field a lower per-acre yield than the average lime area of equal magnitude. It has produced 15,170,000 barrels, and has a forecasted reserve of 16,330,000 barrels. The North Cowden field, which has been replaced as Ector County's most productive field by the Goldsmith area, withheld normal developments along with other West Texas fields when the crude demand and price structure discouraged operations. This 6500-acre field produced 3,966,000 barrels oil to 1937, and will probably average 9000 barrels per acre.

An extended production life for wells in the Permian is a matter of record. The Westbrook field, Mitchell County, is the oldest producing area. The original well made its first production in October, 1920, and continues to pump 10 barrels daily, although it was later deepened to a lower section of the lime, and re-conditioned by new owners. This field has produced 7,861,000 barrels, with only a few wells flowing natural, and is currently pumping about 900 barrels daily.

Multiple Producing Zones

Howard-Glasscock district, which centers upon the southeast portion of Howard County, with production extending across the line into Glasscock County, has four distinct oil horizons. Multiple oil zones prevail in some of the closely related fields comprising the district. Crude yield to close of 1936 is computed at 72,360,000 barrels, with reserves amounting to more than 50 percent of this total. Proration quota of individual wells is about equal to normal daily yield on pump, thereby accounting for the high recovery. The Iatan-East Howard field, which originated in the west portion of Mitchell County, has a projected crude recovery of about 37,200,000 barrels, having produced 5,981,000 barrels, largely from the Howard County portion of the field.

Seniority rights due the Big Lake field through having been the first prolific strike in the Permian have been upheld in that the heavy

Crude Reserves of West Texas Permian Basin Fields

COUNTY OR FIELD	Number Producing Wells	Estimated Producing Acres	Total Recovery to 1-1-37	Estimated Crude Reserve	Estimated Ultimate Recovery
Andrews County:					
Means	35	4,500	689,000	44,311,000	45,000,000
Ogden-Deep Rock	9	2,000	789,575	2,210,425	3,000,000
Crane County:					
Church & Fields	211	3,600	60,932,119	14,067,881	75,000,000
Gulf-McElroy-McClintic	201	9,600	38,971,000	76,229,000	115,200,000
Sand Hills	23	2,000	152,550	19,847,450	20,000,000*
Waddell-Gulf	31	2,000	886,500	19,113,500	20,000,000
Crocket County:					
Powell (World)	37	1,800	4,519,000	2,981,000	7,500,000
Ector County:					
Goldsmith	138	12,000	486,000	95,514,000	96,000,000
Harper	5	640	96,185	4,703,815	4,800,000
North Cowden	142	6,500	3,966,000	54,534,000	58,500,000
Penwell (Judkins)	145	7,000	15,170,000	16,330,000	31,500,000
Glasscock County:					
World-McDowell	5	160	152,372	1,047,628	1,200,000
Howard-Glasscock Counties:					
Big Spring district	236	14,600	72,360,100	39,139,900	111,500,000†
Mitchell County:					
Iatan-East Howard	211	7,200	5,981,800	37,218,200	43,200,000
Westbrook	123	4,400	7,681,143	2,138,857	10,000,000
Pecos County:					
Taylor-Link	55	2,700	4,366,802	3,233,198	7,600,000
Toborg	173	1,300	3,395,204	3,914,288	7,309,492
Yates	540	18,900	223,313,347	451,686,653	675,000,000
Reagan County:					
Big Lake	196	3,200	60,436,051	11,563,949	72,000,000
Big Lake (Deep)	18	1,350	24,529,042	3,970,958	28,500,000
Upton-Crane Counties:					
McCamey	635	12,000	31,196,631	28,803,369	60,000,000
Ward County:					
Estes	157	2,400	495,600	28,304,400	28,800,000
Gulf-O'Brien-North Ward	215	5,000	11,420,000	38,580,000	50,000,000
South Ward	701	9,600	14,410,000	43,190,000	57,600,000
Winkler County:					
Emperor	37	1,200	313,085	8,886,915	9,200,000
Halley	17	950	140,295	4,904,705	5,045,000
Henderson	78	1,500	191,441	17,808,559	18,000,000
Hendrick	389	9,800	184,919,656	11,080,344	196,000,000
Kermit	620	10,500	4,630,000	79,370,000	84,000,000
Keystone (Lime)	42	5,000	515,879	49,484,121	50,000,000
Leck	9	550	2,975,000	525,000	3,500,000
Scarborough	94	3,200	3,550,000	9,250,000	12,800,000
Miscellaenous for Permian District.	220	.....	3,100,000	41,900,000	45,000,000
Total	5,748	.....	786,911,377	1,265,843,115	2,052,754,492

* Sand Hills deep Ordovician not included.
† Iatan-East Howard assigned to Mitchell County.

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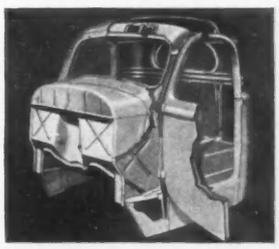

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flow of oil was depleted from the original pay and the Ordovician lime discovered about 5½ years later before proration restrictions were imposed. The original pay produced 60,436,051 barrels to the close of 1936, and about one fifth of this total remains to be recovered. The deep lime zone provided the most spectacular wells in the district prior to the exhaustion of the excessive gas flow, and entered the current year with a total yield of 24,529,000 barrels.

Expansion of the Means field, northern Andrews County, into a major oil area was a factor in encouraging exploration work in the north portion of the basin. Development of the Means field did not attain important proportions until this year, although it was discovered in August, 1934. Productive area is estimated at 4500 acres, with an ultimate recovery of about 45,000,000 barrels.

Ordovician Possibilities

Development of attractive production from the Ordovician series in the Big Lake field, and more recently on the Sand Hills structure, Crane County, deserves consideration in the future in calculating the oil potentialities of the basin. Importance of the Ordovician strike at Sand Hills is sustained by the fact that two minor producers were drilled on the northwest nose of the structure, and that the third project, near Permian production, made a natural flowing producer from Ellenberger limestone. Projected deep tests will determine the value of this lower zone within a few months, and if favorable, deep prospecting may be undertaken on other Permian areas.

Delaware Mountain lime and sand section, responsible for two fields in Loving County and two single-well pools in Ward County, is destined to occupy a more important position in the West Texas setup in the future. Application of knowledge gained from previous exploratory work and study of geological conditions will serve to an advantage when West Texas operators conduct a drive for production in the Delaware. Stage was set for a campaign this year, but the successful opening of the north Permian basin for development has caused many of the leaders to hold off on exploring their lease blocks in the Delaware area. However, the discovery of the Mason field, Loving County, has caused a moderate wildcat campaign to get underway in Loving, Reeves and western Ward and Pecos counties.

Production from the Delaware was found in limited quantities prior to the discovery of oil in the Permian basin. First sustained production is credited to the Wheat field, Loving County, which has produced 6,395,000 barrels of high gravity oil since September, 1925.

New Mexico Advances

New Mexico's position as the sixth largest producing state is largely due to its Permian fields in Lea County, where the majority of the fields occur along definite trends. Crude reserves have been enlarged sufficiently each year to offset oil drainage since the county attained prominence as a source of production in 1930. However, the turning point now confronts the county as crude withdrawals have been stepped up to an annual rate of more than 36,000,000 barrels, and new discoveries and field extensions are not adequate to offset production.

Bulk of Lea County's oil reserves are found on a closely related dolomite trend, extending from the Eaves field, located on the south line, along a north by west course to the Monument field. Largest structure on this trend takes in the Eunice and Monument fields, with an aggregate of about 37,500 acres outlined as productive. Originally the latter two fields were considered non-related, but late developments have shortened the interval to less than one mile. Closing of the gap will likely materialize this year. The two areas have produced about 17,000,000 barrels of oil, and have an estimated crude reserve of about 358,000,000 barrels.

Hobbs First Major Find

Hobbs field, first major oil strike for the state, is approaching its halfway point on recovery. Accumulated production on December 31, 1936, amounted to 73,685,000 barrels from lime horizon, and the productive limits have been definitely outlined by failures and structurally low wells. This field has an incalculable reserve of high gravity oil from the Bowers sand near the 3300-foot level that has been logged over a wide section in drilling for the more prolific lime at 4200 feet, and will be produced through plug-back operations on existing wells when the lower reservoir is depleted of commercial production.

Within the past two years the sandy-lime belt, extending up the east portion of Lea County, has gained prominence as a high gravity oil source. Production performance of completions is somewhat irregular. Marginal wells frequently are brought in near producers that are capable of a large flow. For proration purposes six areas are designated along this belt, but development work has progressed to such a stage that it is now probable that all will be linked by oil or gas production. Owners of large holdings in the lime areas generally did not care to drill for production in the sandy-lime trend, thus accounting for the presence of independents as active producers on acreage farmed out by majors. Since the passing of the peak stage of drilling in the Eunice and Monument fields and absence of new lime discoveries, leading operators are shifting to the less desirable sources of production. This change of policy will lead to complete development of the sandy-lime belt.

Crude Reserves of New Mexico Permian Basin Fields

(All fields in Lea County)

FIELD	Number Producing Wells	Number Producing Acres	Total Recovery to 1-1-37	Estimated Crude Reserve	Estimated Ultimate Recovery
Cooper	85	4,000	5,683,000	24,317,000	30,000,000
Eaves	16	1,500	548,000	6,952,000	7,500,000
Eunice	412	20,000	13,200,000	186,800,000	200,000,000
Hardy	21	760	70,000	3,730,000	3,800,000
Hobbs	259	9,800	73,685,000	74,315,000	147,000,000
Jal	32	2,000	4,965,000	10,035,000	15,000,000
Langlie	25	1,000	193,000	4,807,000	5,000,000
Lynch-Lea	12	800	5,909,700	2,090,300	8,000,000
Lynn (Henry)	6	240	340,280	2,059,720	2,400,000
Maljamar	10	580	3,585,000	2,215,000	5,800,000
Mattix	23	880	65,000	4,135,000	4,200,000
Monument	416	17,500	3,820,000	171,180,000	175,000,000
Penrose	43	5,000	250,000	24,750,000	25,000,000
Skelly	21	1,600	196,813	7,803,187	8,000,000
Miscellaneous	3	120	120,038	479,962	600,000
Total	1,384	63,080	112,630,831	524,669,169	637,300,000

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Permian Basin Drilling Activity at Record Level

By FRANK B. TAYLOR, Staff Writer
and
WARREN L. BAKER, Editor

THE Permian Basin area, including the Delaware sector, of West Texas and New Mexico is experiencing its greatest drilling boom. At the rate of activity that existed during the first six months of 1937, the year will exceed by a good margin the levels attained in any previous 12-month period. This statement applies to both the number of completions and the amount of initial production discovered.

Completions Are High

So far during 1937 there have been 1674 tests completed in West Texas and New Mexico. Despite the fact that only six months have passed, this exceeds all preceding full years, except 1936 when the existing record of 2143 completions were made in the territory. At the present rate of drilling, more than 3000 completions should be made in the region during 1937, which would more than double the quantity finished in any year with the exception of 1936.

The annual trend of completions, number of oil wells completed and their initial production for the Permian Basin, as set forth in Table 1, furnishes an interesting picture of progress and activity.

The table shows that back in 1928, when Yates, Hendricks and other major fields of that day were active, the number of completions climbed to an annual total of 1216. Thereafter activity declined, due in part no doubt to the depression and the lack of important field strikes. A low of 258 completions was reached during the year 1932, when the trend turned upward and has risen steadily since. Now this many tests are completed each month. In 1933, a total of 321 tests were completed. The following year this was practically doubled when 712 were completed. In 1934, there were 1115 completions. The present boom got under way at this time, and 1936 saw 2143 completions, or 927 more than in 1928, previously the most active year.

A good idea of the growth of the drilling boom during the past 18 months is shown by the breakdown of the activity into six-month periods in Table 1. The first half of 1936 saw 924 tests finished, while the last six months recorded 1219 completions. These compare with 1674 completions during the first half of 1937. Therefore, 750 more tests were completed in 1937 than in the corresponding period a year ago. This is an increase of 61 percent.

Drilling Efficiency High

The true gauge of drilling efficiency is the number of successful completions and amount of initial production recovered. In this respect, 1937 has an excellent opportunity of breaking a record for the region that has stood since 1928.

The number of successful completions, meaning oil wells, found by drilling operations has followed a trend fairly close to that of all tests completed until recent years, when the percentage of producing wells has been greater than formerly. These figures are also shown in Table 1.

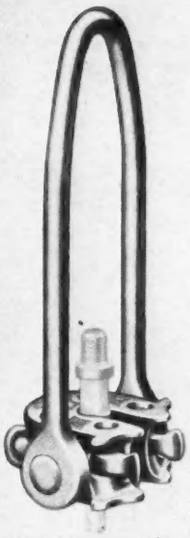
In completing 1216 tests in 1928, 865 producing wells resulted; whereas in 1936, when 2143 tests were completed, 1873 of them were oil producers. In other words, during 1928, 71 percent of the tests drilled were oil producers, while

TABLE 1

Comparison of West Texas-New Mexico Completion and Initial Production Rates During the Past 10 Years and Fist Six Months of 1937

PERIOD	WEST TEXAS			NEW MEXICO			TOTAL BOTH AREAS		
	Completions	Oil Wells	Initial Production	Completions	Oil Wells	Initial Production	Completions	Oil Wells	Initial Production
First half 1937	1349	1197	1,752,445	349	325	581,800	1674	1522	2,334,245
Last half 1936	923	799	1,186,591	296	281	417,027	1219	1080	1,603,618
First half 1936	656	551	775,599	268	242	462,682	924	793	1,238,281
Year 1936	1579	1350	1,962,190	564	523	879,709	2143	1873	2,841,899
Year 1935	813	636	821,998	302	240	664,609	1115	876	1,486,607
Year 1934	583	461	1,194,456	129	100	265,340	712	561	1,459,796
Year 1933	261	191	444,794	60	41	156,362	321	232	601,156
Year 1932	199	142	42,938	59	47	213,662	258	189	256,600
Year 1931	236	147	49,101	38	12	131,240	274	159	180,341
Year 1930	647	440	287,202	203	152	1,051,845	850	592	1,339,047
Year 1929	1026	676	1,239,220	133	69	18,000	1159	745	1,257,220
Year 1928	1150	850	3,739,490	66	15	2,214	1216	865	3,741,704
Year 1927	701	669	951,145	27	17	2,860	728	686	954,005

IT ISN'T HARD TO UNDERSTAND WHY PRODUCTION MEN LIKE THEM!



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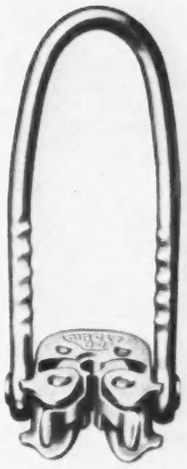

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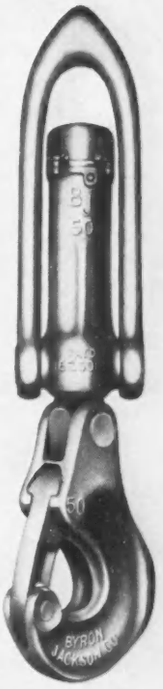

The BJ Snapon Tubing Tong completely encircles the tubing and locks on automatically. It ratchets perfectly; has a "back-up lever" to take care of cross threads; and is heat treated for extra strength.

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PRODUCTION TOOLS

in 1936 this had increased to 87 percent. The first half of 1937 has been even more successful, 90 percent of the tests drilled resulting in producing wells when there were 1522 out of 1674 completions.

More Initial Yield

Table 1 also indicates that the 9-year-old record for annual initial production in West Texas - New Mexico probably will be broken this year. During the first six months of this year the producing wells completed had a combined initial yield of 2,334,245 barrels, which exceeded all previous annual records except 1936 and 1928. In fact, the amount of oil discovered in 1936 was not far ahead, totaling 2,841,899 barrels, or but 507,654 barrels more than found so far this year, and 1936 was the second best year in this respect in the oil history of the area. A remarkable initial yield was obtained in 1928 from the 865 completed oil wells. Huge wells at Yates and Hendricks shot the total up to 3,741,704 barrels. No doubt 1928 will continue to excel in average initial flow per finished well, but it is likely to be shorn of its total volume record by 1937 operations, as the combined initial output of all completions the past six months amounted to well over half the volume of 1928.

It is of interest that during the "lean" years combined initial production of all wells completed in West Texas and New Mexico in 1931 had an initial yield of but 180,341 barrels. The initial flow of wells completed during the first half of 1937 was sufficient to average this amount every two weeks.

Requires Much Footage

In drilling so many wells in West Texas and New Mexico a vast amount of footage is required. In West Texas a total of 1,577,190 feet was drilled in 1934, which jumped to 2,298,274 feet in 1935, and to 4,251,034 feet in 1936. Records for New Mexico footage in these years are incomplete, but 2,130,078 feet was drilled in 1936. The combined total in 1936 of both New Mexico and West Texas was 6,381,112 feet. The amount of footage in 1937 has not as yet been tabulated, but at the present rate of activity should total approximately 9,000,000 feet for the year, and perhaps 10,000,000 feet.

TABLE 2
Comparison of Drilling Activity in West Texas

	July 1 1936	Jan. 1 1937	July 1 1937
Locations	65	66	75
Rigs	18	22	35
Drilling	218	398	384
Inactives	35	33	45
Total Operations	336	398	539

West Texas Leads

West Texas, which, of course, embraces by far the largest amount of acreage, is more active than New Mexico. It accounted for 80 percent of the number of completions during the first half of 1937. Of 1674 completions in the Permian Basin, 1349 were in West Texas.

However, both West Texas and New Mexico have registered large growths in completions since the depression low. Although both established new records in this respect in 1936, both are running considerably ahead of last year, and therefore should exceed in 1937 the peak level attained last year. From a percentage standpoint, New Mexico is leading West Texas. The former during the first six months of this year has shown an increase of 64 percent in the number of completions over last year, while West Texas has been increasing 13 percent. Thus New Mexico and West Texas combined have increased their rate of drilling 38½ percent over a year ago, while the nation as a whole has advanced 17 percent. West Texas in 1936 increased 793 percent since its depression low of 199 in 1932, whereas New Mexico in completing 523 against 38 in its low year of 1931, climbed nearly 1500 percent.

During the first six months of the year West Texas discovered 1,752,445 barrels of the initial production, while the New Mexico portion was yielding 581,800 barrels. For the year 1936, West Texas completed wells had a combined original output of 1,962,190 barrels and New Mexico 879,709 barrels. These figures offer an interesting contrast with the year 1932, when West Texas had 49,101 barrels and New Mexico 131,240 barrels of initial production.

Over 500 Rigs

The West Texas portion also has the largest number of the Permian Basin tests now drilling. The extent to which this area has come to the front within the past year is clearly revealed by a comparison of operations. Table 2 shows how the number of drilling operations has increased. As of July 1, 1937, there were 539 operations in West Texas, which is an increase of 141 over six months ago, and an increase of 302 for the past year. This is equal to an increase of 36 and 60 percent respectively. New highs in the number of operations have been established during each consecutive six-month period of the past 18 months.

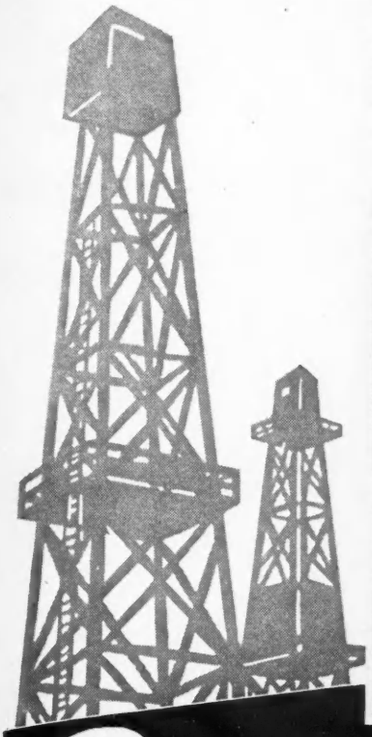
Table 3 shows the location of West Texas activity by counties. Due to widely scattered operations, interest is shown not to be centered in any particular spot, but that it is comparatively broad. Successful wildcats have momentarily flashed a focal point of interest in a small region, but such hot spots have been only minor to the composite picture.

The segregation of operations by counties illustrates the wide play of interest, with the sectors receiving major work. It is notable that Ector County leads the list in total operations. It gained this position a few months ago from Winkler and Ward counties. The latter two counties have witnessed major development campaigns and carried the banner of activity for West Texas for a number of years, in fact practically since early exploration work in the region.

All present indications point toward a continuance of the upward drilling trend in West Texas, with operations expected to arrive at new all-time highs. A pertinent comparison, and one that definitely sustains this assumption, is in the increase in number of new locations. There were 75 the first of July, 1937, compared with 66 the first of the year and 65 at mid-year 1936.

TABLE 3
West Texas Drilling Activity by Counties

COUNTY	Operations	COUNTY	Operations
Andrews	17	McCulloch	2
Bailey	2	Menard	1
Brewster	3	Mitchell	2
Cochran	2	Pecos	44
Coke	2	Presidio	3
Crane	33	Reagan	2
Crocket	4	Reeves	2
Dawson	2	Runnells	4
Ector	128	Schleicher	3
El Paso	1	Scurry	4
Fisher	11	Stonewall	1
Gaines	11	Terrell	1
Garza	2	Terry	3
Glasscock	5	Tom Green	1
Hockley	2	Upton	47
Howard	36	Ward	67
Hudspeth	1	Winkler	79
Irion	1	Yoakum	6
Jeff Davis	1		
Loving	9	TOTAL	539



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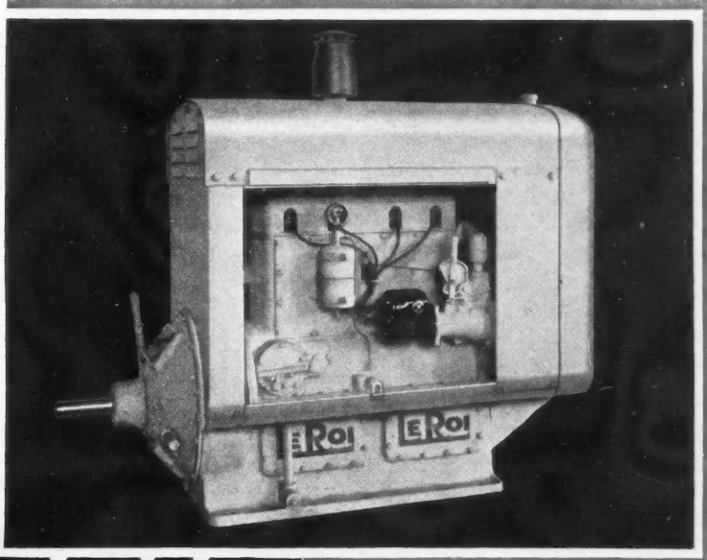

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Gas-Lift Possibilities

ARE GREAT IN WEST TEXAS AND NEW MEXICO AREAS

By R. R. KYNER, Chief Engineer,
Gas-Lift Corporation

Presented before Permian Basin Chapter of the American Petroleum Institute at Midland, Texas, on April 23, 1937.

NEARLY ten years have elapsed since any concentrated attention has been given to the possibilities of air or gas lift in the West Texas and New Mexico areas. Considerable good work was accomplished during the above mentioned era but the period of voluntary, then enforced proration, in addition to the decreased demand and lower prices of crude, throttled the impetus of the method and in most instances, forced experimentation into a dormant or almost stagnatic condition. However, during this prorated era some very useful information has been gained through experimenting with tapered tubing, bottom-hole chokes and the correction of inefficient natural flowing conditions which is very beneficial and actually an essential part of air-gas lift.

It has been the writer's good fortune to have experienced most of these phases, and the following discussion is based upon experience in this area during the major portion of the past ten years. The purpose of this paper is to outline the trend of air-gas lift possibilities from the time of completion to the stage of economic limit or depletion.

Completions and Natural Flow

During the early development of oil pools, the best or possibly the most economical method of producing is unknown. Naturally the first fact to be established is whether or not the area will justify the expense of drilling, and for that reason many of the early wells are equipped in the manner that demands the least amount of new capital, regardless of the efficiency of the method. Therefore, it will be assumed that the development has been found justified and since the writer is of the opinion that virtually every well in this area can be produced to its economic limit by air or gas lift, this discussion will be based on this premise.

The methods discussed in this article regarding completion are intended for application in those wells that will present a producing problem in a relatively short time after their completion, and obviously not to the more prolific areas until such time as change becomes necessary.

Since both natural and artificial gas lift are problems in vertical flow, no serious attempt will be made to definitely divide the two.

Method of Potential and Flow

The desirability of establishing a high potential is a common one. Therefore, if there is any question as to the capacity that a flow string may have, a larger size may be used for this purpose, and justifiable changes made for daily allowables.

A convenient and worthwhile table relative to capacities was formulated by Pennington over a decade ago, and is listed below as Table 1. The writer has added a quick reference which was taken from field notes, and is listed as Table 2.

The use of mechanical devices, known as kick-off valves, flow valves, and the more recent addition of automatic bottom-hole intermitters, has greatly increased the range of adaptability of air or gas lift. These devices are likewise very beneficial as an aid to natural flow, both of which will be discussed in this paper. The use of foot-pieces and kick-off valves has not been a recent discovery, but their use in the past has been limited to localized areas, and

TABLE 1

Capacity of Pipe to Produce at Velocity of 10 Feet Per Second

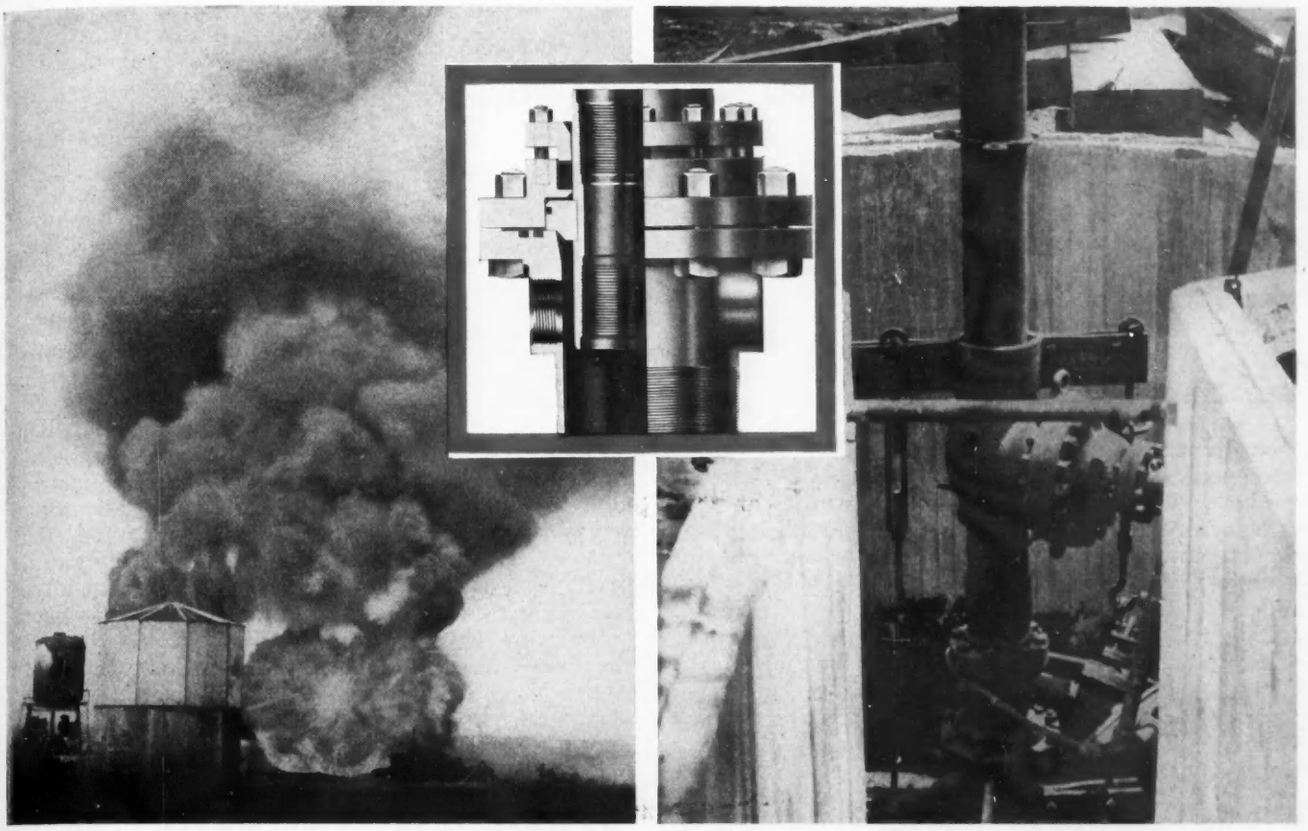
Size Pipe	Barrels per 24 Hours
1 inch	835
1¼ inch	1,251
1½ inch	2,270
2 inch	3,498
2½ inch	5,232
3 inch	7,545
3½ inch	10,252
4 inch	13,406
4½ inch	16,992
5 inch	20,880

TABLE 2

Capacity of Pipe to Produce

Size Pipe	Barrels per Hour
1¼ inch	5 to 10
1½ inch	10 to 15
2 inch	15 to 25
2½ inch	25 to 60
3 inch	60 to 100

"With the fire out the undertaking of controlling the flow of the well still remained. A survey of the well showed that the 7⅝" to 5½" Rectorhead on the casing was undamaged, a circumstance which was largely responsible for the final control of the well without trouble."



ABOVE is the comment of the superintendent who directed the successful control of this Monument, New Mexico, well, shown burning at left, and producing later under full control, at right.

The RECTORHEAD not only withstood the fire—it enabled the crew to stab the flow after the fire was killed, and to bring the well under control. Thus the RECTORHEAD paid for itself many times over, as it is doing on numerous types of trouble jobs all over the oil country.

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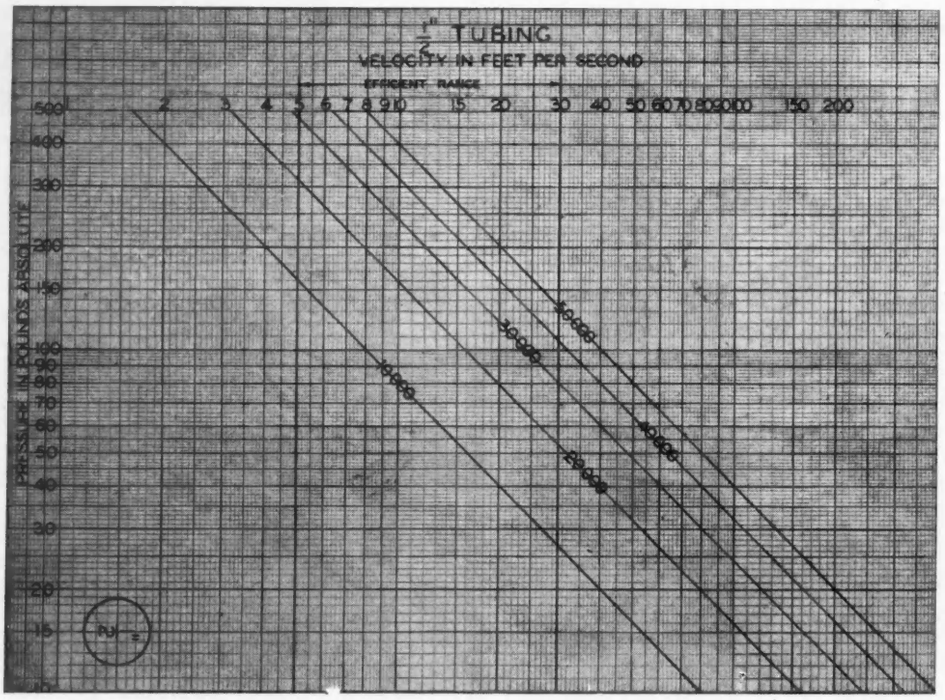
½" TUBING
VELOCITY IN FEET PER SECOND
EFFICIENT RANGE
2 3 4 5 6 7 8 9 10 15 20 30 40 50 60 70 80 90 100 150 200
500 400 300 200 150 100 90 80 70 60 50 40 30 20 15
PRESSURE IN POUNDS ABSOLUTE
100 PSI
50 PSI
25 PSI
10 PSI
5 PSI
P.S.I. =

FIGURE 1

Flow velocity in feet per second through ½-inch tubing at different pressures.

their general application has not been heretofore attempted.

The approximate amounts of gas necessary for velocity or stream-line flow are well established and considerable work has been done and accepted in this direction. Convenient velocity tables have been added to this report for reference purposes. (Figures 1, 2, 3, 4, 5, 6, 7 and 8.)

If we are to be influenced by the leaders of the oil industry, we can be assured that the prorated basis of production is here to stay for sometime to come. Therefore, the maximum allowables for any well can be safely predicted over a considerable length of time. If, after due consideration of all the above mentioned factors, it is found advisable to use air or gas life as the ultimate means of lifting the oil, the first decision that becomes necessary is that of the method of flow, whether it is to be that of stop-cocking, or of continuous flow.

Continuous Flow

So much has been said and written regarding conservation of natural energy, that it has almost become an accepted practice. Continuous flow is intended to mean efficient flow through properly designed flow strings and at allowable rates, and not necessarily maximum well capacities. The use of tapered tubing for increasing daily rates or extending flowing life enjoyed a considerable reign of popularity. However, the main disadvantage was that of changing conditions, necessitating a redesign of flow string, and the economic factor overcame that of flowing efficiency. As engineers, we are constantly reminded that our theories are usually accepted so long as they are economically possible, and beyond this, we must for the most part, be dependent upon research departments for purely experimental data.

The use of straight strings of small tubing for the correction of gas-oil ratios has been well demonstrated in many West Texas fields. No real advantage was gained from tapered tubing in instances that required back-pressure at the surface. It might be added that it is the writer's firm opinion that air or gas lift operations cannot be efficiently conducted against a choke. Back pressure is necessary in some instances, but can be accomplished in a much more efficient manner. Chokes very often are only a half hearted attempt to correct a faulty eductor tube. Please be reminded that this discussion is hypothetical only in the sense that it does not apply to any particular well or wells, and is actually based on experience in this area.

Many small wells in West Texas have been com-

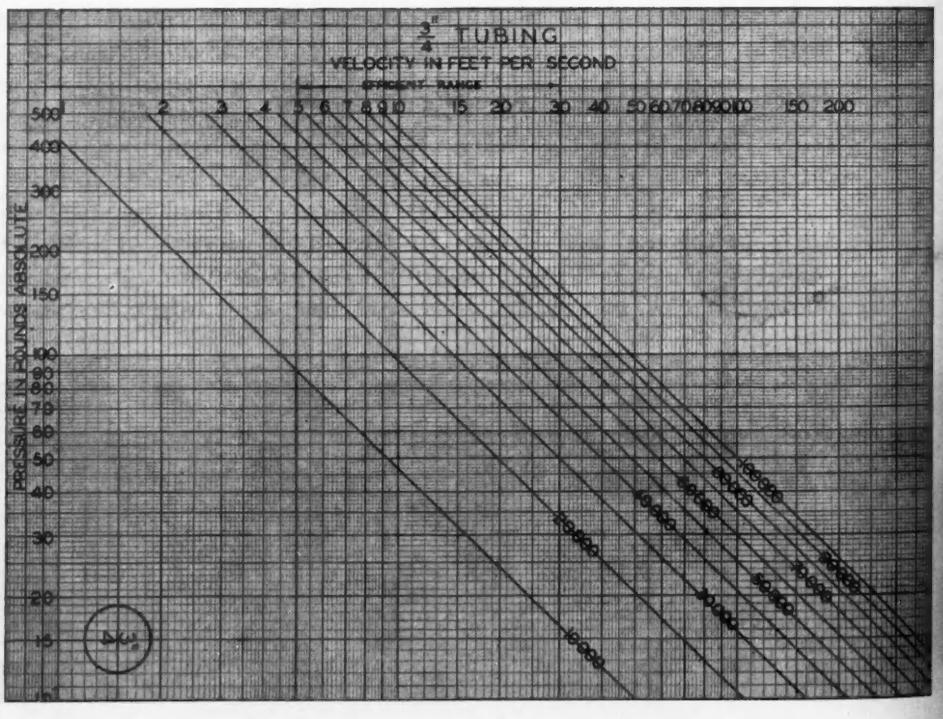
¾" TUBING
VELOCITY IN FEET PER SECOND
EFFICIENT RANGE
2 3 4 5 6 7 8 9 10 15 20 30 40 50 60 70 80 90 100 150 200
500 400 300 200 150 100 90 80 70 60 50 40 30 20 15
PRESSURE IN POUNDS ABSOLUTE
100 PSI
50 PSI
25 PSI
10 PSI
5 PSI
P.S.I. =

FIGURE 2

Flow velocity in feet per second through ¾-inch tubing at different pressures.

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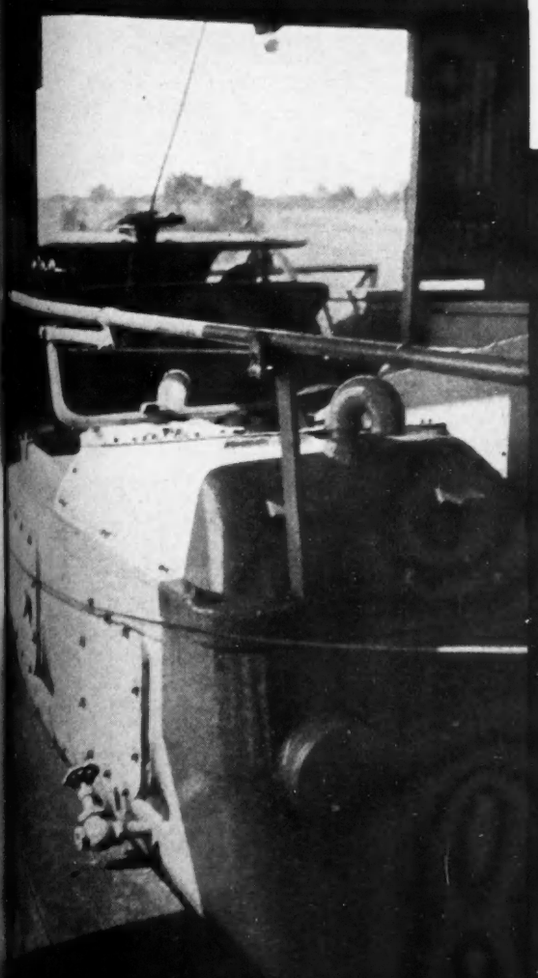

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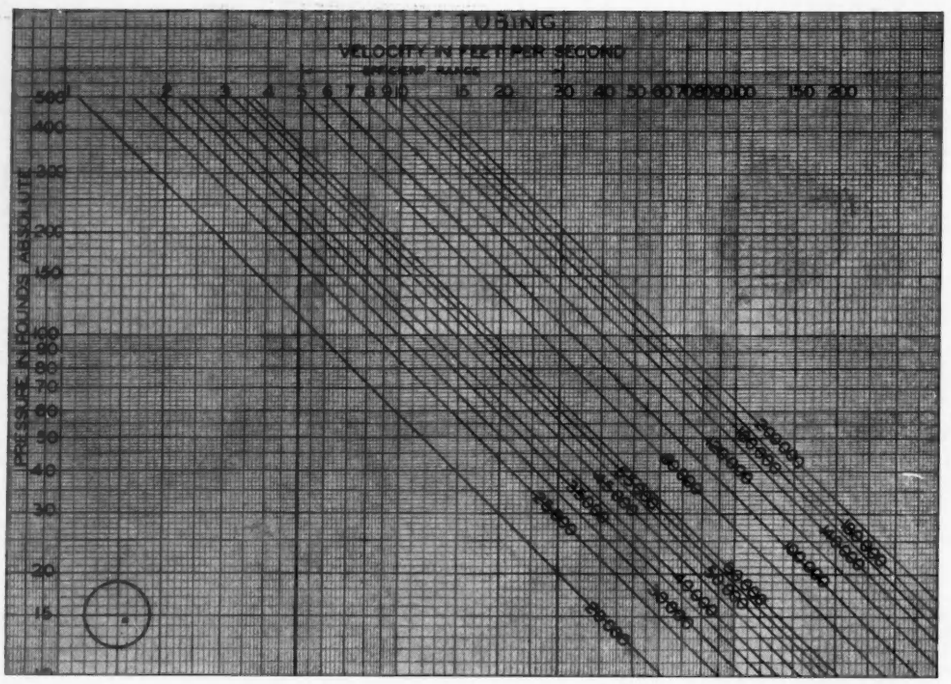


FIGURE 3

Flow velocity in feet per second through 1-inch tubing at different pressures.

pleted, and are still producing after several years with small tubing strings. Wells in this category are principally those having a relatively high bottom-hole pressure, but a lack of permeability or porosity, and therefore, a low productivity index.

The addition of kick-off, or flow valves to these strings, have in many instances made this extended flowing life possible. These mechanical devices can be so adjusted as to constitute a kick-off or non-reopening type valve. The adaptability of this particular valve is limited to those wells that only require starting.

Many successful installations of this type are found in Ward, Pecos, Ector and Loving counties. Valves so adjusted, close after a given amount of work has been accomplished or a predetermined differential of pressure has been reached. Set pressures and port inlet sizes, are dependent upon the depth of the hole, the size of the eductor tube, and characteristics of fluid to be lifted. To reopen this valve it is necessary to equalize the tubing and casing pressures, or artificially rock the well, and duplicate starting operations. Wells so equipped eventually flow around the bottom of the tubing, or from a valve or valves, at which point the necessary closing differential cannot be reached. The latter leaves considerable to speculation, and where this may be necessary, flow valves are usually recommended.

Wells with a low productivity index many times fail to flow efficiently through large strings due to lack of submergence, and likewise fail through small tubing due to lack of sand face differential because of excessive starting pressures. The advantage of valves under such operating conditions is obvious.

Some experimenting is being conducted, employing the use of a diaphragm motor valve on the flow line, which is operated by regulated gas pressure from the casing. This arrangement is intended to permit the flow line valve to open at a given casing pressure and close at a lower pressure.

The closing point still being above the pressure necessary to force the oil around the bottom of the tubing and thus dissipate the gas, and the opening low enough to insure the presence of oil in the hole.

In a heavily prorated area, there is little question regarding the soundness of properly designed strings. The use of smaller than ordinary sizes in conjunction with flow valves is proving very profitable. The valves eliminate the aforementioned high starting or kick-off pressures, and very definitely increase the

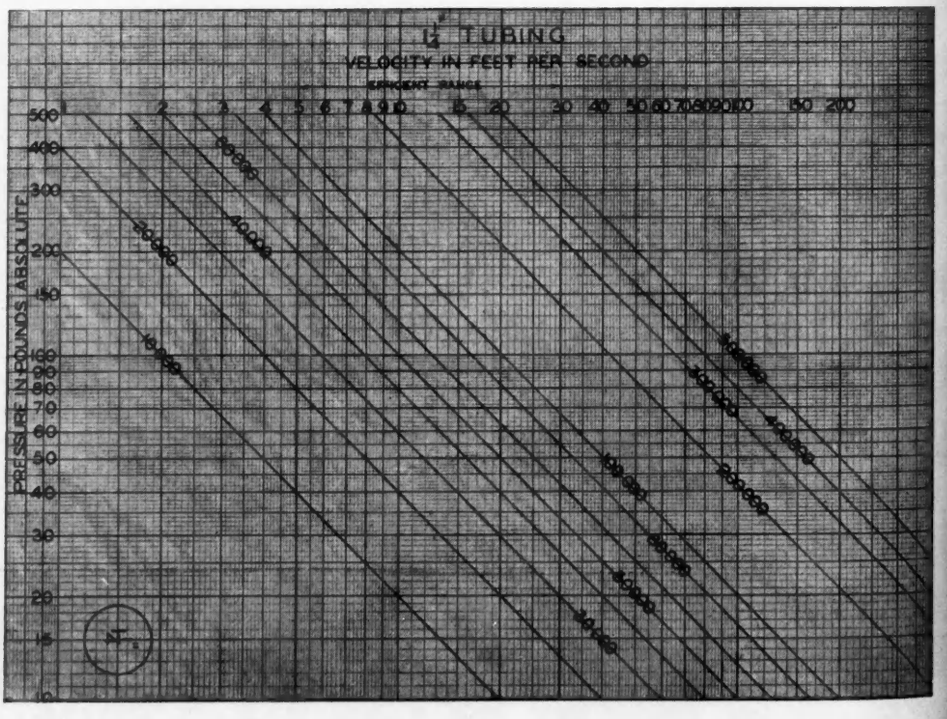
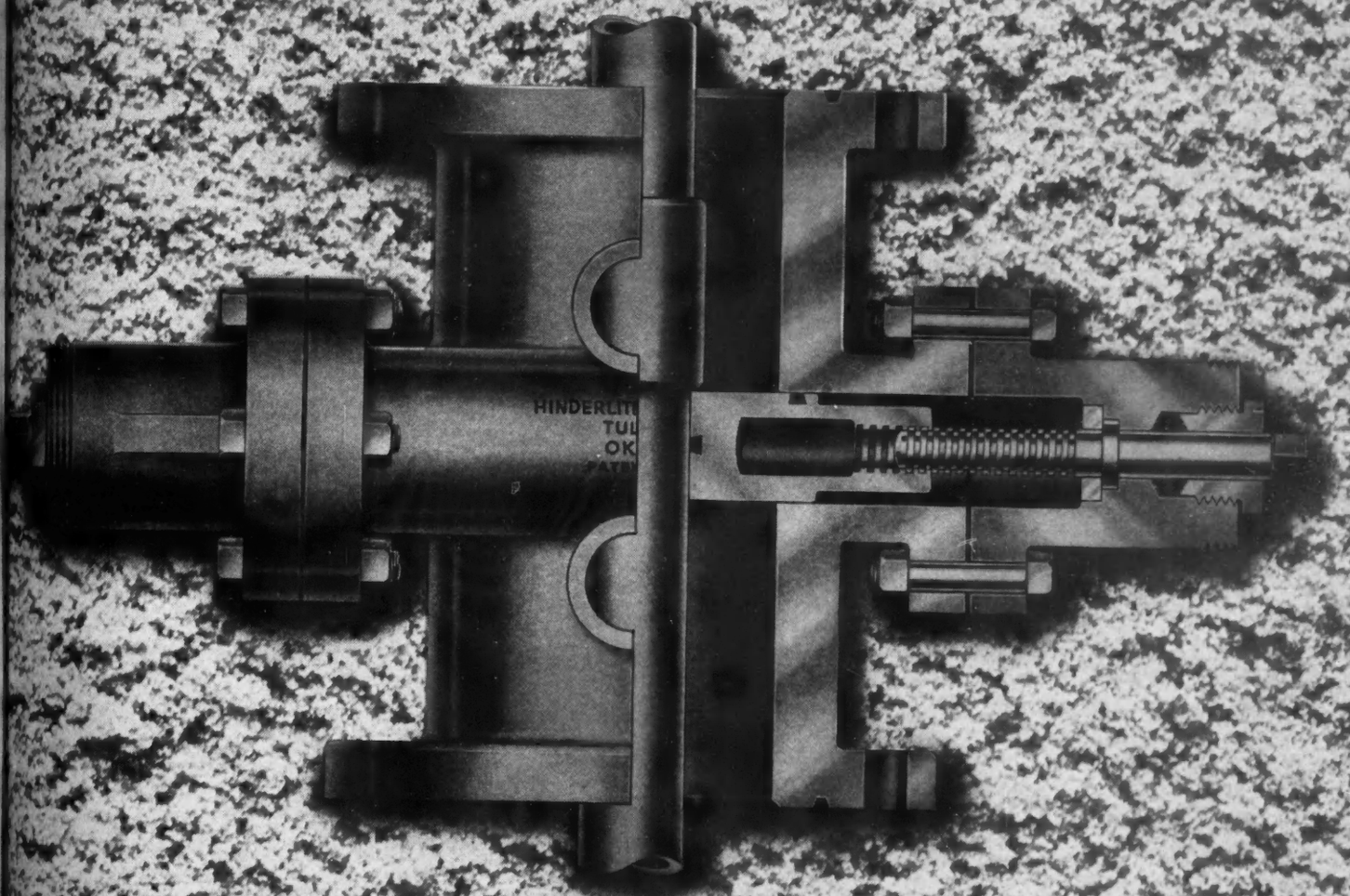


FIGURE 4

Flow velocity in feet per second through 1¼-inch tubing at different pressures.

WELL HEAD DEVICES

HIGH PRESSURE ...OIL and GAS



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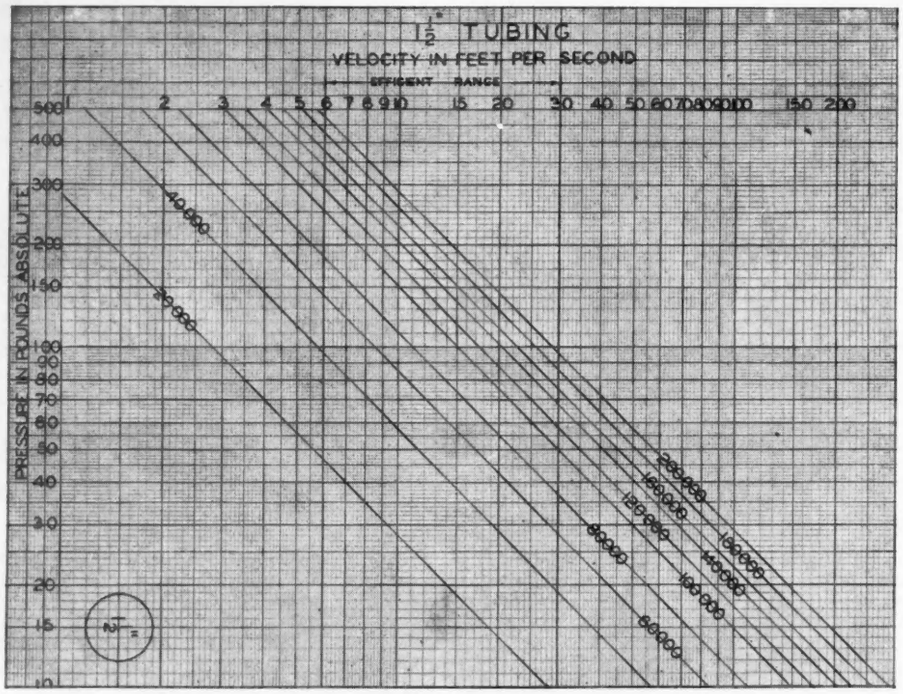


FIGURE 5

Flow velocity in feet per second through 1½-inch tubing at different pressures.

flexibility and life of the installation. Since it has been proven possible to flow from points above the bottom of the tubing, varying lifts and percentages of submergence are possible with the same installation. However, the degree of control under natural flowing conditions is not as complete as when extraneous gas is added. The suggested use of small strings is not intended to mean that a change be made with each change of allowable, but that only the original size be selected that has the capacity of the maximum allowable, or only slightly exceeds it. Then as pressures decline and rates of flow decrease, a controlled heading or rapid intermittent action through the use of flow valves will enable the operator to gain the greatest over-all efficiency, and still stay within the bounds of practicability.

Stop-Cocking

The stop-cocking or intermittent method of flow is usually necessitated by the fact that large tubing has already been purchased, and is very likely in the hole.

No doubt the main reason for over-sized tubing is the advantage of added pumping capacity. Larger tubing permits slower pumping and usually less repair. From an air or gas lift viewpoint its greatest asset would be the advantage of added capacities in the event of water intrusion, or the intermittent possibilities in the last stage of production.

For flowing prorated amounts large tubing presents the necessity of either flowing inefficiently through a choke or stop-cocking as indicated. The efficiency of the first method has already been discussed. However, the second method has caused some operators considerable concern regarding the possibilities of coning bottom-hole water. The total volumetric displacement governs the efficiency to a large extent, and in most cases the advantage of efficient flow more than offsets any hazards that nominal rates might present. This, of course, applies very definitely to the type of wells discussed in this paper, and not to those of the gusher type.

This section of the discussion has been limited to the various means of natural flow, and during this period large tubing, and stop-cocking has the following disadvantages:

1. Added labor necessary to start and stop the flow of oil.
2. Dying due to by-passing of the gas with low velocities, or shut-in periods.
3. Lack of submergence in the latter part of the natural flowing life.

With the changing bottom-hole conditions the time necessary to produce the allowable is a variable one,

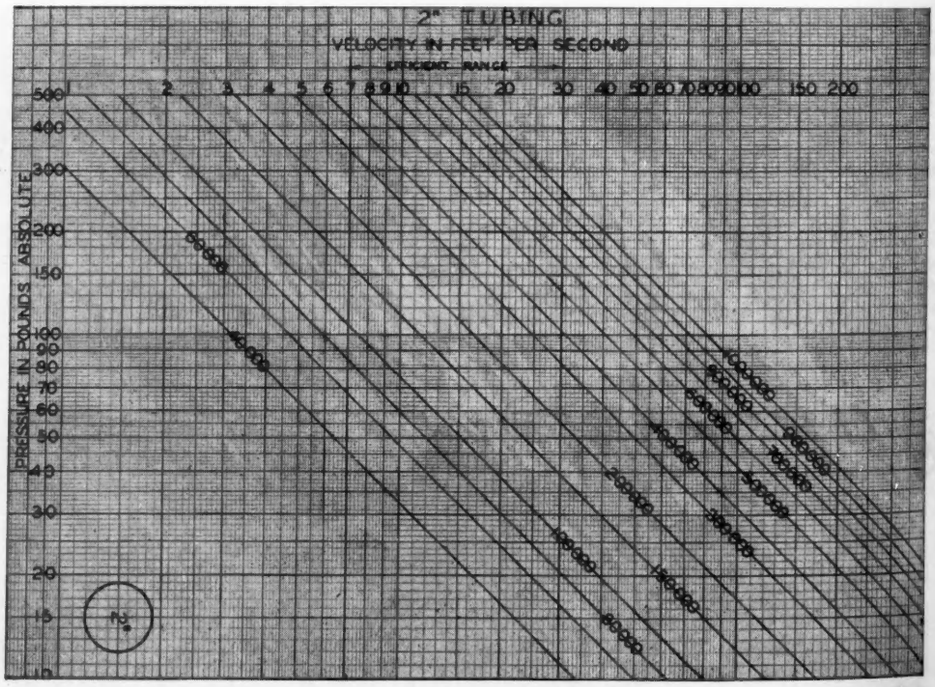
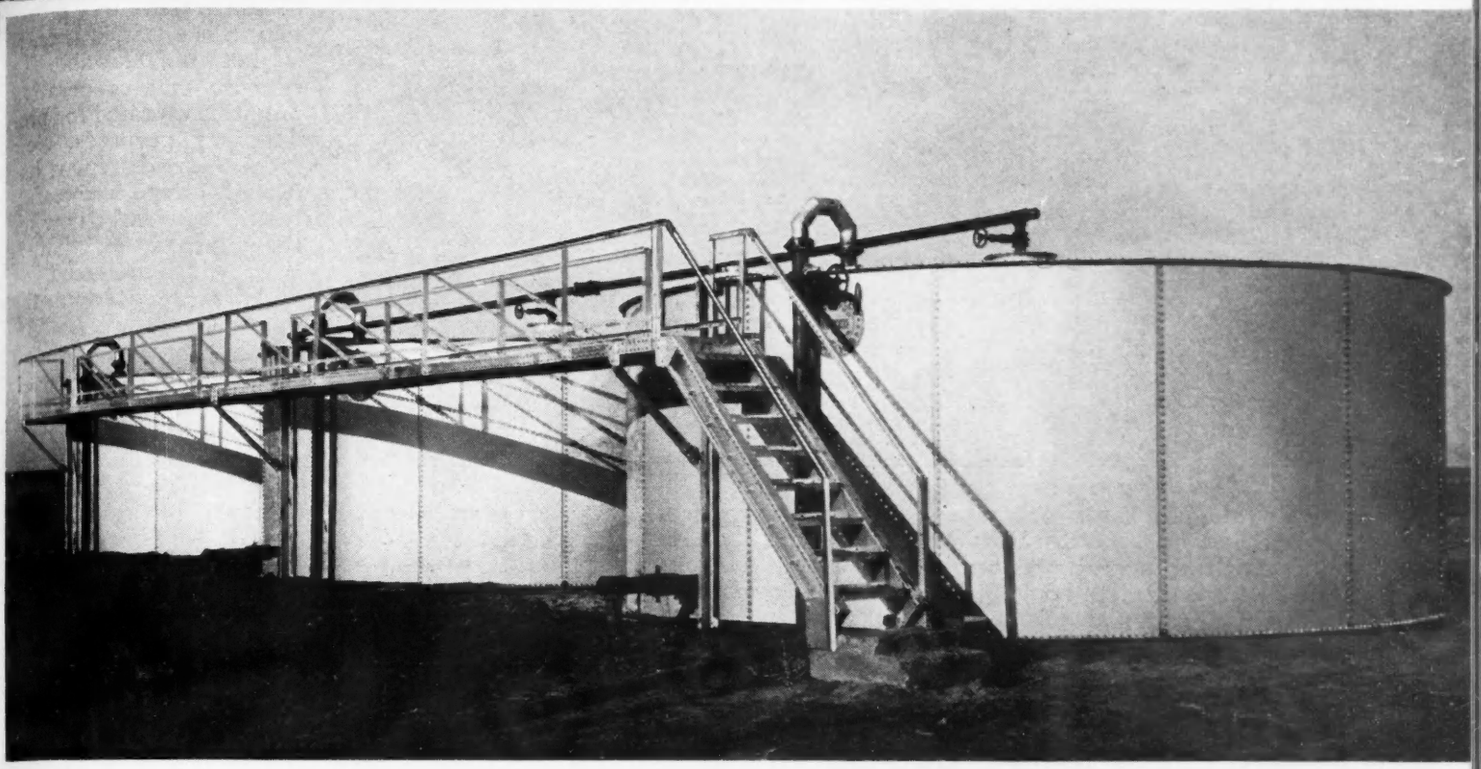


FIGURE 6

Flow velocity in feet per second through 2-inch tubing at different pressures.

Galvanized TANKS AND WALKWAYS



In West Texas, DURABLE Storage for Sour Crude

Calls for "DOUBLE-Hot-Dip Galvanized" MALONEY Tanks

Oil operators in the West Texas and New Mexico sour-crude areas will get EXTRA-DURABLE storage for their crude if they will standardize on MALONEY *Galvanized* Bolted Steel Tanks. MALONEY Galvanized Tanks offer extra resistance to all forms of corrosion because they are (1) "DOUBLE-Hot-Dip coated, (2) AFTER fabrication."

The completely fabricated parts of standard MALONEY Tanks are first given a prolonged treatment in sulphuric and muriatic baths. This insures an *extra-tight bond* between steel and coating. We then apply an *extra-heavy coating* of virgin zinc, 99.9% pure, by giving the steel two separate hot dips in the zinc vats. Application of the coating *after* fabrication insures that all edges and bolt holes are coated, and also eliminates any damage to coating that might occur during fabrication. Our special bolts of 90,000-pounds tensile strength also are hot-dip galvanized.

MALONEY Galvanized Tanks incorporate all of the valuable features offered by standard MALONEY Tanks. These include: (1) Construction of highest grade Copper Steel; (2) Patented "crimp" at all seams and joints; (3) Seams reinforced with steel channels; (4) Extra-heavy steel deck rafter, attachable to segmental deck sheets with bolts held in place; (5) Punched, cloth-inserted live red rubber packing, extra-durable in all products of crude; (6) All-aluminum non-spark vacuum-pressure valve and thief-hatch; (7) Large 30″ x 48″ clean-out plate.

MALONEY standard and galvanized Self-Supporting, Sectional Steel Stairways and Walkways are made in interchangeable 4, 6 and 8-foot units of 26-inch width. From these units, any combination of stairways and main and branch walkways can be quickly constructed.

A. P. I. Specifications. Tank capacities 100 to 10,000 Bbls. Packed in steel-bound crates for export. For further details refer to 1937 Composite Catalog.

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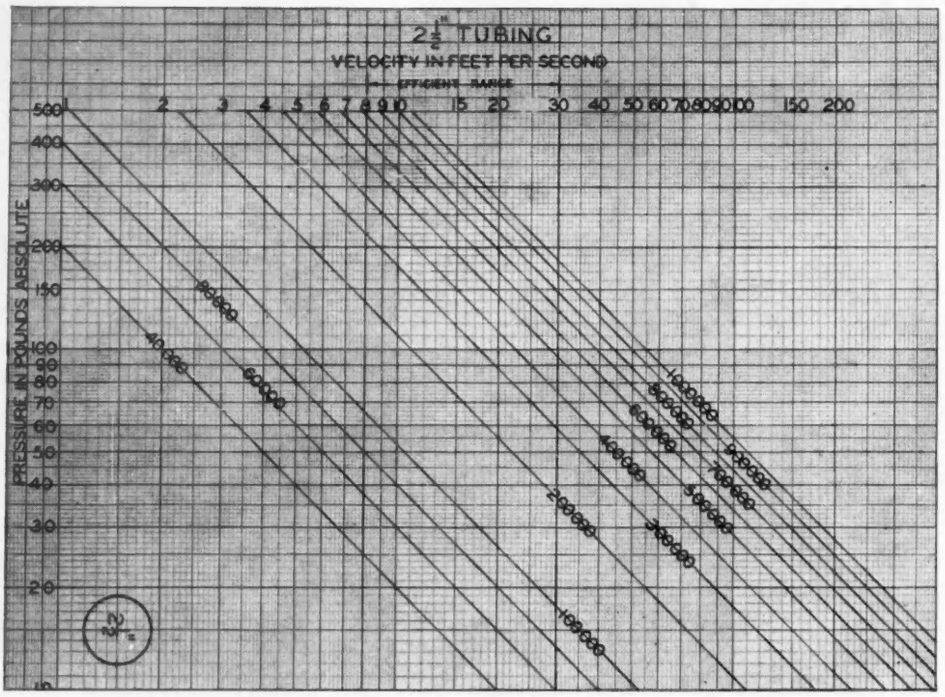

FIGURE 7

Flow velocity in feet per second through 2½-inch tubing at different pressures.

and the problem of maintaining the highest degree of efficiency is therefore difficult. The difficulty presented through failure to kick-off, may be overcome in the manner previously outlined. The casing may be used as a reservoir and the well unloaded several times daily without trouble. Unfortunately there is little that can be accomplished in the correction of lack of submergence until such time as artificial lift is begun.

Normal Gas Lift Period

Although many of the advantages of the modern air or gas lift may not be commonly known, the requisites of such methods are well established. These constitute the ultimate necessity of compressed air or gas, either from a natural or artificial source of sufficient volume and pressure to lift oil or water from the producing depth.

West Texas and New Mexico are indeed fortunate in having such a tremendous supply of high-pressure gas available for this purpose. The location of the available gas may not always be as convenient as would be preferred but calculation of the cost of the necessary transmission lines would in almost every instance make its use profitable. The extent and possibilities of cooperation among operators has been well demonstrated by proration. Since this is true, it is not unreasonable to suppose that cooperation might be attained for producing purposes. New Mexico, in particular, has enough gas to successfully and efficiently flow all the oil or water that is now being produced, or will be produced in the immediate future.

Gas lift is now being used in the Jal, Cooper, Monument and Hobbs areas, and the need is increasing daily. The possible savings are so great that every available barrel should be produced by this method.

The possibilties of the use of high-pressure natural gas are tremendously increased when consideration is given to the fact that oil is now being produced by artificially compressed air or gas on a very economical basis. As pointed out by L. L. Foley*, it is possible that proration presents the greatest opportunity that air or gas lift has ever experienced. It has certainly afforded an opportunity to produce oil efficiently and at the same time experiment on stripper production.

Gasoline plants, that are now burning excess residue gas, can be influenced to recompress this gas and recycle same at high pressure for lifting purposes. Under controlled ratios the G.P.M. content is almost

*Consulting petroleum engineer and geologist, Tulsa, Oklahoma.

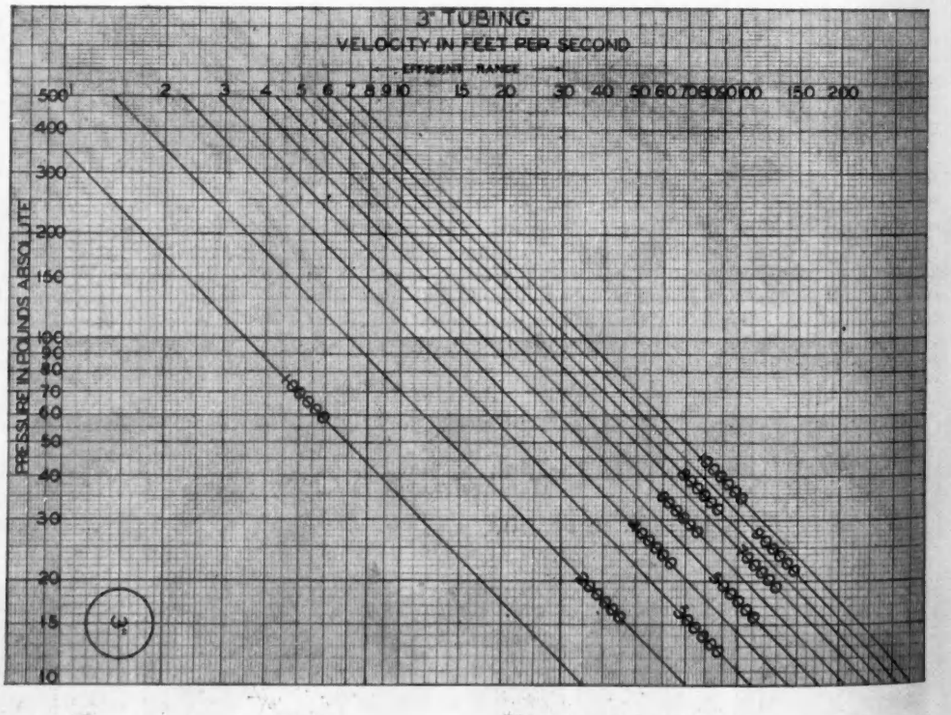

FIGURE 8

Flow velocity in feet per second through 2-inch tubing at different pressures.

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This is a short, short story of how preforming the wires and strands makes Yellow Strand Rotary Lines more economical.

By preforming, the lines become limp, tractable, easy to handle and install. This actually saves time and money before a single stand of drill pipe has been handled.

Because practically pre-broken in, "Flex-Set" Preformed Yellow Strand Rotary Lines can operate at full load and full speed quicker, with less danger of injury. And you should see how they resist fatigue and drum crushing! That means long life!

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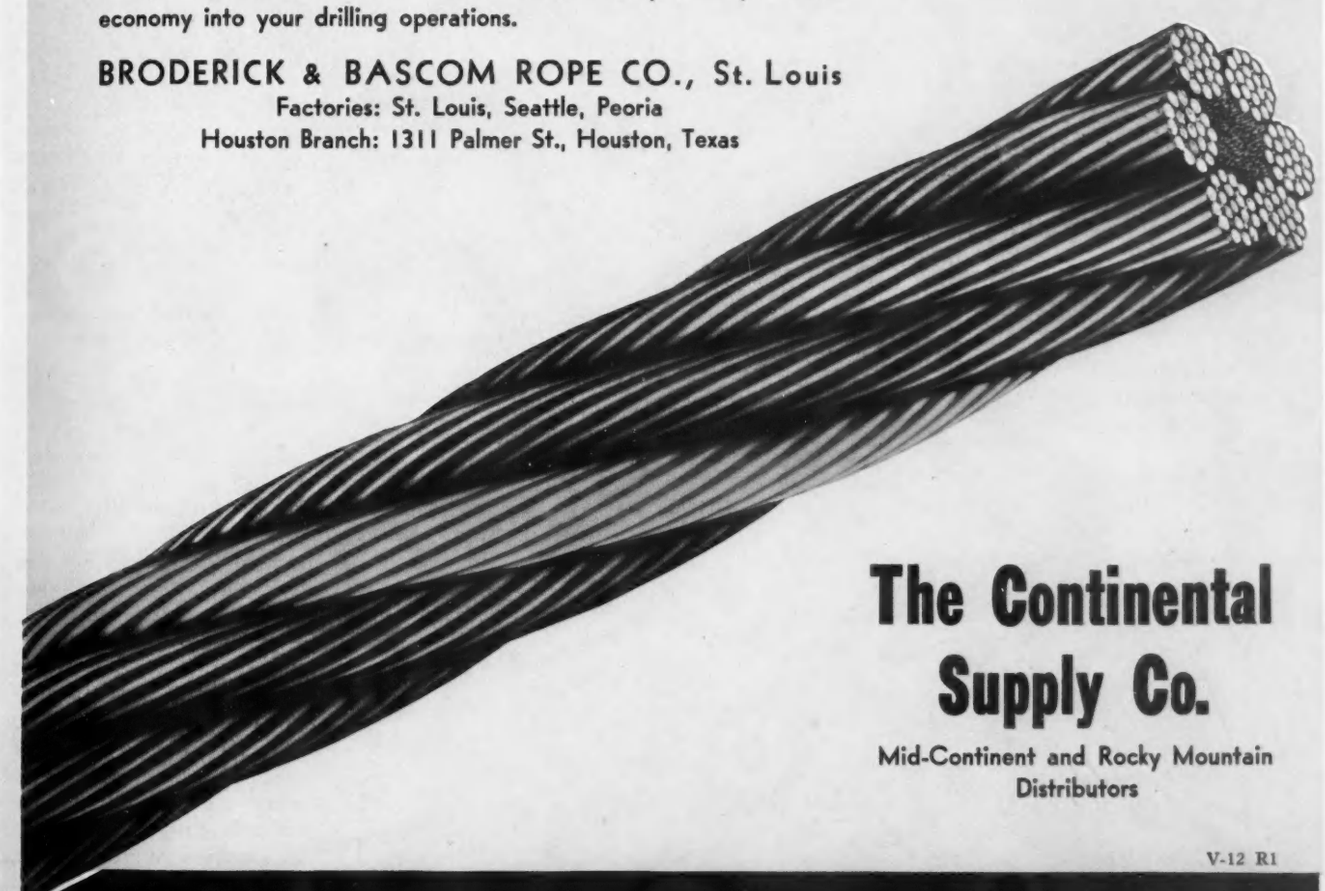

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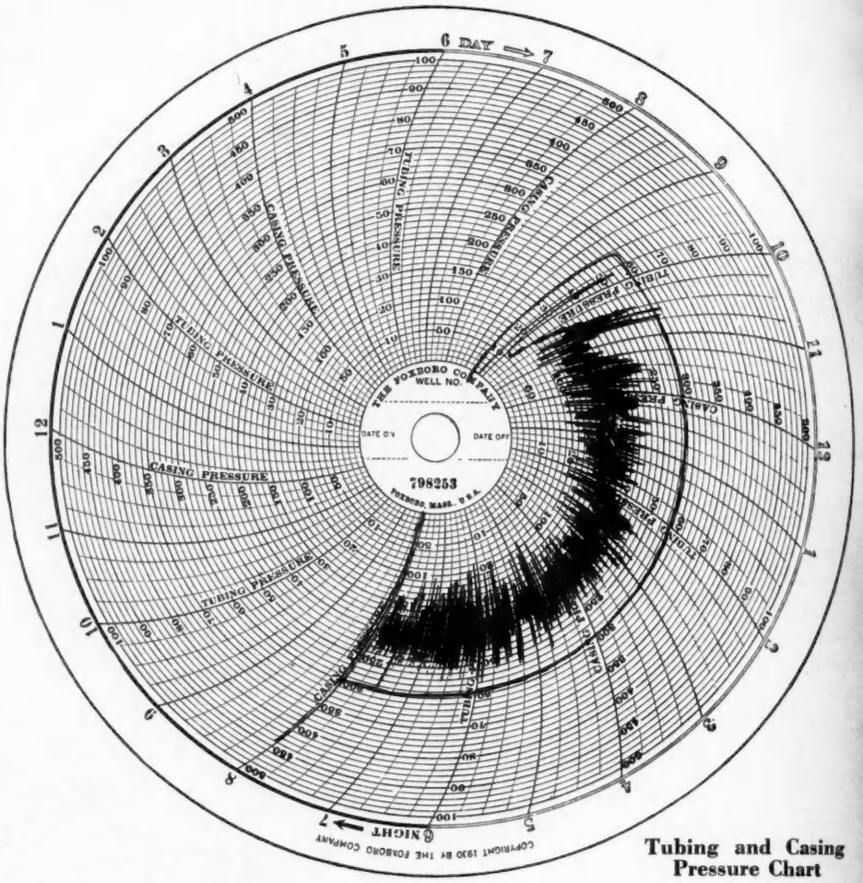
equal to that of the original vapors. The soundness of this method has been very thoroughly demonstrated in other areas of this state. A major gasoline manufacturer offered this opportunity in one of the West Texas fields at a cost of five cents per thousand.

Considering the fact that profitable gas lift operations were carried on in this area ten years ago at a cost of nine cents per thousand, it leaves little doubt as to the economics of this idea. This system affords the greatest possible economy of gas and in a large measure insures the investment of the gasoline plant.

The use of flow valves has eliminated the necessity of high starting pressures, and thereby lowered the cost of compressor installations. This very fact has made air or gas lift under prorated conditions possible. The necessity of available high-pressure gas to start each well every day would have made the cost of the installation prohibitive. Valves should not be accepted as a cure-all but utilized for the many advantages for which they were intended. The necessary study prior to installation is still as important as during straight gas lift, but the added efficiency and flexibility are of major importance. An outstanding example, is their use in lifting the Ordovician production at Big Lake. Starting pressures of 1000 pounds to 1200 pounds were reduced to 600 pounds and 700 pounds, and ratios were reduced in proportion. Formational high-pressure gas was available in limited quantities and the compression costs at such pressure are necessarily high. Obviously the advantages of air or gas lift increase in proportion to depth. The writer afforded the opportunity for some experience in the Kettleman Hills area which resulted in a decided success.

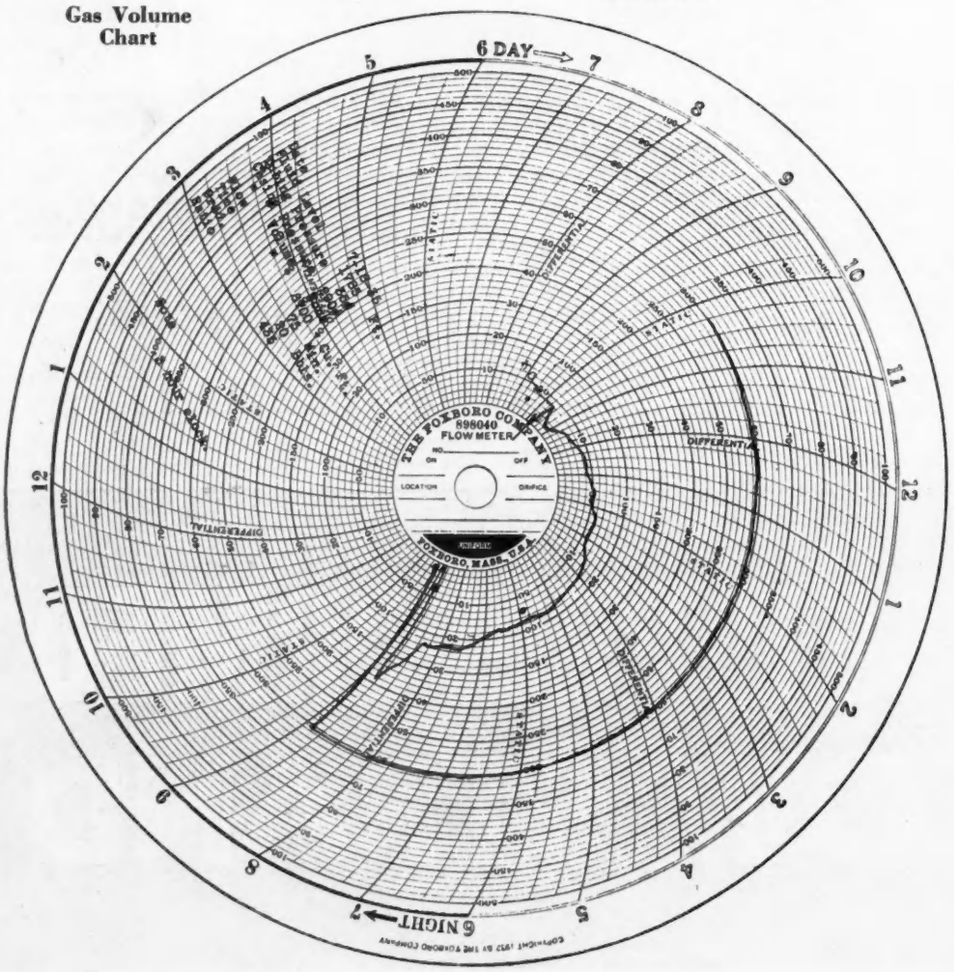
Efficiencies of gas lift operations vary from 10 to 35 percent, and have a vital effect on plant in-



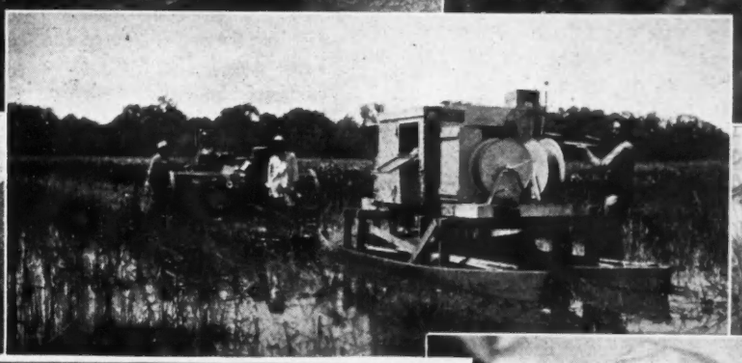
Tubing and Casing Pressure Chart

FIGURE 9

Gas Volume Chart



Candid Camera IN THE FIELD WITH G.S.I.



The pictures on this page show G.S.I. men working under varied conditions that have become more or less routine to them in making seismic surveys. Years of experience in whipping the "tough ones" make ordinary jobs seem easy.

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DALLAS, TEXAS

vestments. Considering an efficiency of 10 percent, if it were possible to increase this to 15 percent the necessary plant investment would be lowered, by one third. Therein lies a distinct advantage of flow valves. A chart showing the typical controlled heading action of flow valves is shown in Figure 9.

The advantages and disadvantages of small and large tubing are applicable to continuous gas lift operations. Properly designed strings offer the possibility of continuous flow and minimum labor requirements, and large tubing offers greater rates and a consequent additional labor charge. However, it is possible to intermit when using extraneous gas, and thus increase the flexibility of large strings, and thereby attain ratios comparable with those of the strings designed for continuous flow. Automatic intermitting that is controlled by the flow of oil into the hole can only be accomplished through the use of flow valves. If the decision in favor of air or gas lift is made at the time of completion, the greatest possible advantages are naturally to be expected.

Successful gas lift operations are now being carried on in Reagan, Ector, Andrews, Ward, Loving, Mitchell, Pecos, Winkler and Jones counties, West Texas, and in Lea County, New Mexico. The writer has gathered information on 135 valve installations in these counties. In almost every instance efficient flow is being obtained. This certainly presents a cross section of the possibilities in this area.

A reversible type flow valve has been developed which enables the operator to flow either through the tubing or casing and obtain control over starting pressures and input ratios in either case. The reversible or casing flow type has been instrumental in obtaining profit out of wells producing as low as two percent of oil and at rates as high as 500 barrels per hour.

Certainly no one will contest the fact that a greater quantity of fluid can be handled by gas lift than by any other method. This is well demonstrated in Winkler County, that has passed through the early stages of straight gas lift, pump, casing and electric pumps, and finally back to gas lift with valves to lift the last economical barrel of production. Ratios are as low as 50 feet per barrel in the Winkler area and rates exceeding 450 barrels. Table 3 is a tabulation of tests in this area.

Past references to efficiency are intended to mean the greatest attainable under the existing conditions. If it is possible to produce any well by air or gas lift more economically than by any other method, then the installation should be considered successful. It is the writer's opinion that the economic factor should be the rule of guidance, rather than pressure and ratio. Briefly stated, an operator should profit by the errors in design, caused by any reason, and make more careful plans for future installations. The limits of ordinary air or gas lift is reached when the friction flow of the fluid from any given depth exceeds the formational pressure at that depth. From this point packer installations, and some form of intermittent flow is necessary.

Intermittent Flow

Many different types of intermittent flow have been attempted in the past, all which have been surface controlled in some manner. This method necessitated the use of some form of timing device, or balanced valve operation which turned gas on at regular intervals for a given length of time. From a mechanical viewpoint, this operation was entirely automatic, in that it turned on and off at the predetermined intervals, but the fill up rate of the well in most instances did not influence this operation. Therein lies the weakness of that method. It required considerable calculation prior to installations, and like tapered tubing becomes inefficient due to changing bottom-hole conditions.

Various bottom-hole hook-ups were used, which included chambers, double strings and in many instances small eductor tubes in an effort to gain the necessary submergence. The most profitable use of this method was found in wells producing small amounts from excessive depths. By excessive is meant, depths from which ordinary pumping costs would have been prohibitive. California operators have been the most extensive users of this method.

The use of a packer and standing valve, with perforations above the packer is now becoming quite common. This is actually a revival of the old Ragland method, the original intention of which was to relieve the back pressure from the producing sand. This method of intermittent flow presents the following advantages:

1. The casing may be used as a reservoir.
2. Prevents a repressuring or reverse flow of fluid when pressure is applied.

Such an installation is only necessary for intermitting flow, since the only time that reverse flow might take place under continuous flow would be at the moment of starting. The main reason for the use of packer and standing valve at this time is Railroad Commission regulations regarding the use of gas lift.

During the past three years the writer has devoted his time to the study of the possibilities of flowing either very large volumes of fluid, or very small amounts from the stripper type of production. The results from large volumes speak for themselves, and the maximum efficiency of the accumulation and unloading method was soon discovered.

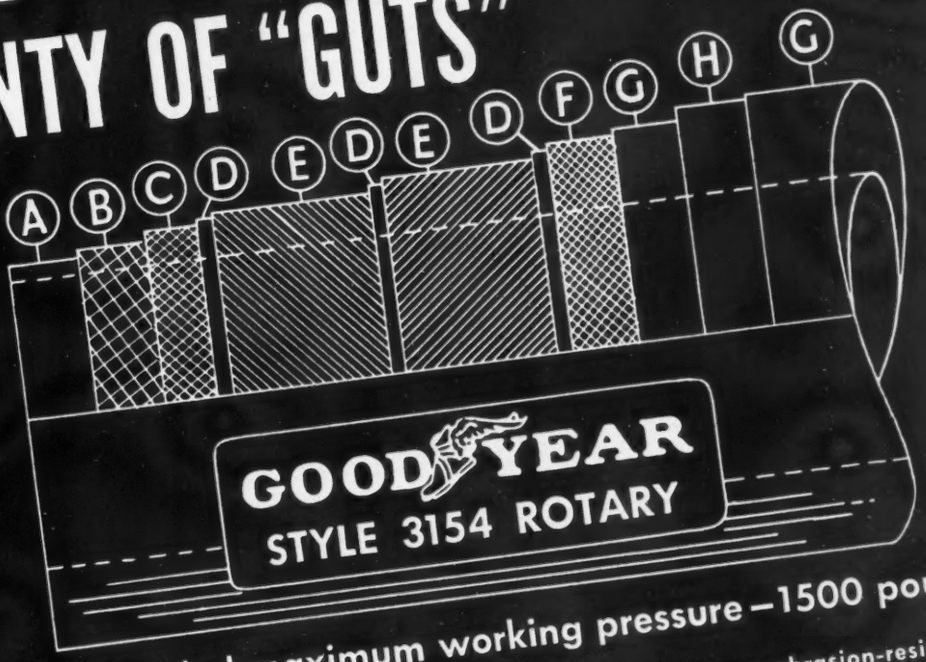
The results obtained were encouraging, but left considerable to be accomplished. Since that time attention has been given to automatic bottom-hole intermitters. The necessary expense attached to pulling and rerunning tubing became a serious obstacle, and for that reason a removable type, or drop-valve arrangement was developed. This type of installation requires the use of a packer, standing valve, and seat-

TABLE 3

Flow Valve Installations of the Reversible Type

AREA	Date	IN-PUT		RATE PER		PRESSURE	
		Vol.	Ratio	Hour	Day	Tubing, Lbs.	Casing, Lbs.
Winkler Test 1	September 2, 1936	426M	268	66	1,590	400	20
Winkler Test 2	September 9, 1936	132M	47	116	2,784	350	40
Winkler Test 3	September 8, 1936	95M	33	120	2,880	270	35
Winkler Test 4	September 9, 1936	287M	108	111	2,664	460	45
Winkler Test 5	September 9, 1936	580M	78	309	7,416	460	20
Winkler Test 6	September 8, 1936	358M	42	357	8,568	400	20
Winkler Test 7	September 11, 1936	420M	175	100	2,400	370	50
Winkler Test 8	September 5, 1936	234M	157	62	1,488	25	440
Winkler Test 9	November 13, 1936	320M	110	121	2,904	40	550
Lea Test 10	October 17, 1936	588M	96	250	6,000	575	25
Lea Test 11	October 18, 1936	237M	79	125	3,000	500	20
Lea Test 12	August 2, 1936	904M	81	465	11,169	600	45
Lea Test 13	September 1, 1936	414M	54	319	7,660	700	45

HERE'S A TWO-WIRE HOSE with PLENTY OF "GUTS"

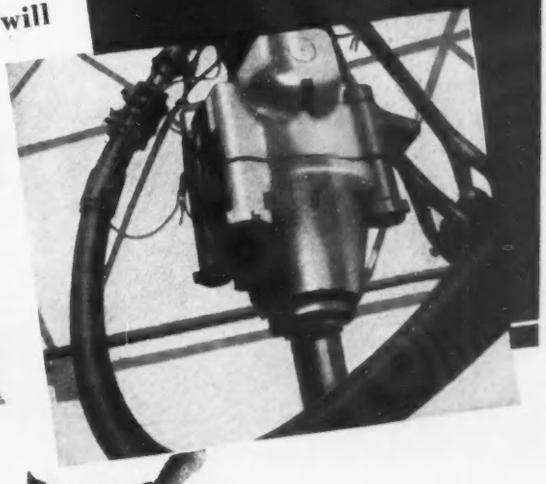


Recommended maximum working pressure—1500 pounds

A—Heavy abrasion-resisting tube.
B—Gum-coated breaker fabric.
C—Three-ply layer of heavy duck.
D—Gum lining insulating wire.
E-E—Layers of high-tensile, rust-resisting braided steel wire, laid "criss-cross" at most efficient angle.
F—Two heavy duck plies.
G-G—End-reenforcing plies.
H—Heavy cover with high abrasion and age resistance.

SEE how Goodyear Style 3154 Rotary Hose is built and you will see why drillers call it the most economical hose ever built for drilling at average depths and pressures. Note how its ends are doubly reenforced to hold the couplings — and how its many-plied duck carcass and twin-wire armoring are gum-bonded to create a sturdy yet flexible wall that holds the pressure and gives long wear. Just try Style 3154 and see how much longer it lasts you!

For higher pressures Goodyear also makes Style 3157 (three wire) and for deepest drilling Style 3158 (five wire). The G. T. M.—Goodyear Technical Man—will be glad to recommend the best type for your operation. Just write Goodyear, Akron, Ohio, or Los Angeles, California —or the nearest Goodyear Mechanical Rubber Goods Distributor.



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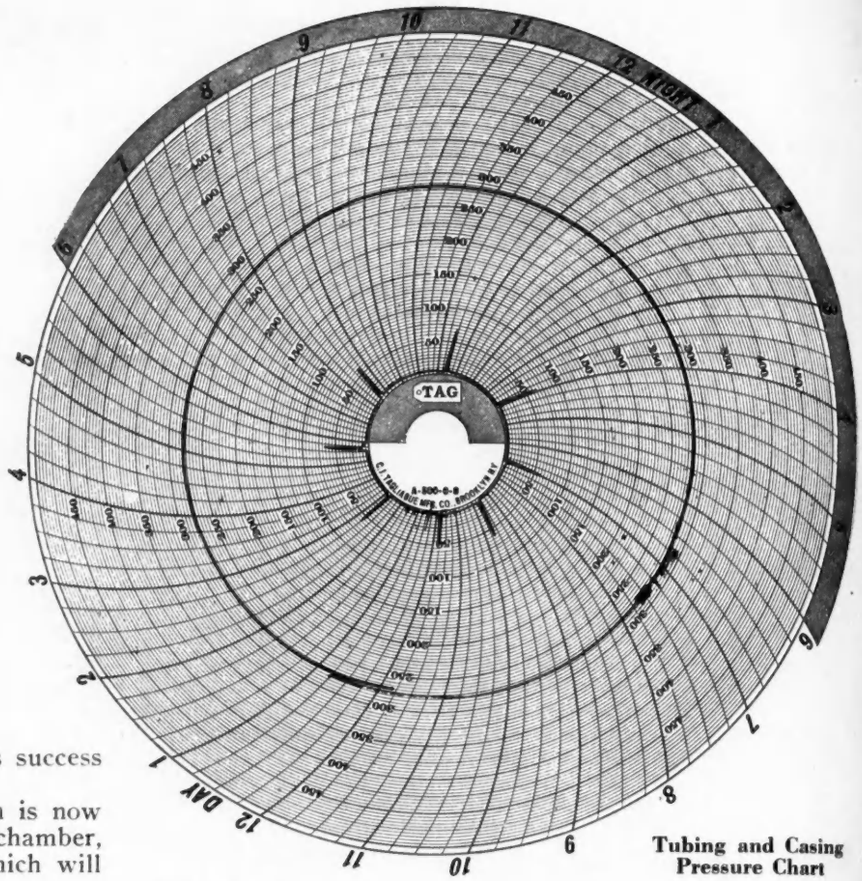
ing nipple. The seating nipple is equipped with check valves which prevent the flow of oil back into the casing after it has been unloaded. The unloading takes place before the packer is set. This is a tremendous advantage when using but one valve, and operating with limited pressure. The setting and removal of this valve is accomplished with a wire line, and a round-trip can be made in approximately one and a half hours by one man.

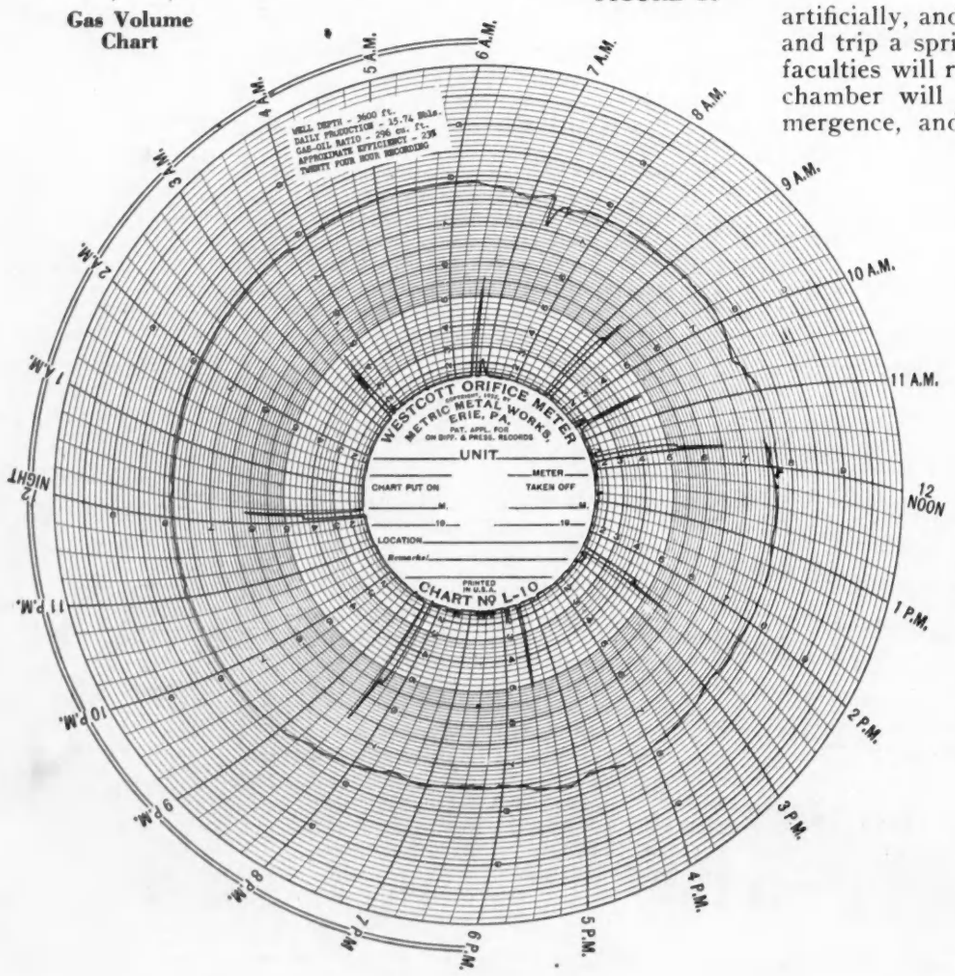
With the removal of the necessary pulling expense the development has gained momentum and several installations are operating successfully at this time. A chart of a typical installation is included in this report, listed as Figure 10.

The question of submergence is still the deciding factor, but the writer feels that this type will have a very wide application. After studying the productivity index of any given well, its success can be safely predicted.

Some additional experimentation is now carried on employing the use of a chamber, and a mechanical arrangement which will artificially, and automatically rock the well, and trip a spring loaded valve. The closing faculties will remain in the valve itself. The chamber will care for the necessary submergence, and the automatic rocking arrangement will make it possible to lift wells with a very low operating head. This is but another step in the march of progress, and its ultimate value is yet to be determined.



Tubing and Casing Pressure Chart



Gas Volume Chart

FIGURE 10

Conclusion

The foregoing discussion has been a conscientious attempt to outline the possibilities of natural flow, and air or gas lift in the West Texas and New Mexico areas. Since the mechanical problem involved is based very largely upon empirical data, no reference has been made to theories that may be, in many instances, only applicable to very localized conditions.

The possibilities in this area are tremendous, and certainly warrant an intensive study of the method. The aim has always been to produce oil more economically, and it is the writer's belief that air or gas lift affords that opportunity.

50% MORE HOLE PER DOLLAR

WELL AFTER WELL

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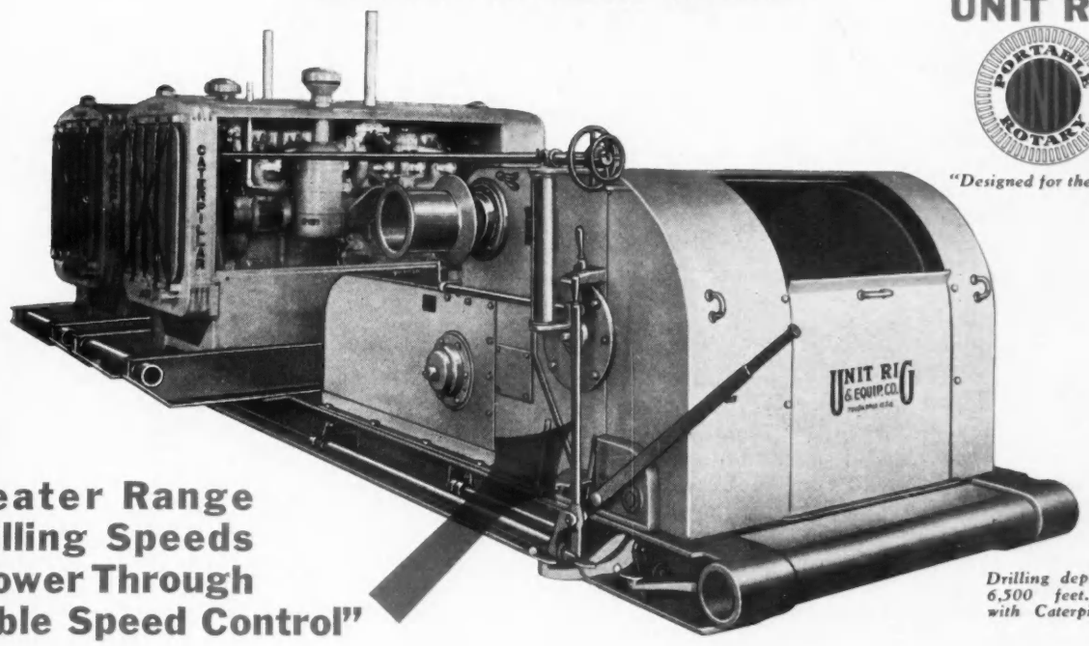
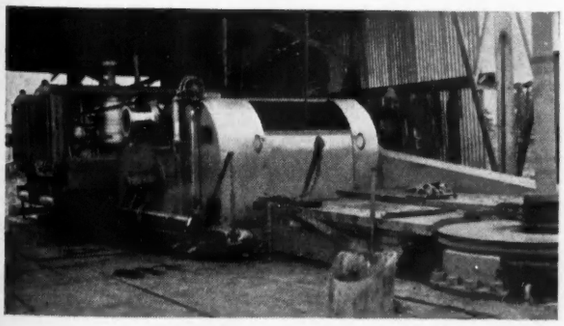


A Greater Range of Drilling Speeds and Power Through "Flexible Speed Control"

Drilling depths 2,000 to 6,500 feet. Powered with Caterpillar Diesels.

Look at the lever!



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RECENT DEVELOPMENTS IN

Completing Wells

UNDER CONTROLLED PRESSURE

By A. PRANGER, Chief Engineer, Guiberson Corporation

IN MANY rotary areas the customary drilling-in method, in which a column of mud, heavy enough to counterbalance the pressure in the producing formation, is used to prevent the well from coming in prematurely, is being replaced by the "drilling in under controlled pressure" completion method. The latter method is becoming the accepted practice when drilling in highly permeable lime formations and low pressure producing sands, and employs the use of oil, a mixture of oil and gas, and in some instances of gas alone as a circulating column, depending on the depth of the well, the encountered formation pressures, etc. The circulating column is made so light as to permit the formation, which is being drilled, to produce oil and gas while drilling proceeds. A number of West Texas permian basin fields have such characteristics, and the use of the method is increasing in this area.

In fields where the bottom-hole pressure is low as in many parts of West Texas and the Oklahoma City field, it is obvious that a heavy column of drilling mud would cause a considerable amount of the mud to penetrate the producing sands, tending to clog the sand and often causing the complete loss of circulation, resulting in the well coming in as a poor producer. As an example, the column of mud in a 6000-foot well would result in a pressure of 2500 pounds on the bottom of the hole, and it can easily be visualized what the results would be on wells having bottom-hole pressures of 400 pounds or less. A column of dead oil in such locations is also undesirable, the oil often being more penetrating than mud, so that it is hard to maintain continuous circulation unless the column is lightened by using large amounts of gas with the oil.

Even in such fields as the Goldsmith and other areas in West Texas, the Monument and Hobbs fields in New Mexico, and the Fitts pool in Oklahoma, where the bottom-hole pressures run as high as 1800 pounds, wells drilled in with mud show a presence of mud in the oil produced from the well for a long time after completion, with the result that most operators in these fields are using this newer method of drilling in.

This same method was recently introduced in the Bryson field of Central West Texas, where up to that time the wells were brought in with a spudder or standard rig after using the rotary to within a short distance of the pay sand. In each case it has resulted in larger initial production and considerable saving in time and money. The same favorable results were obtained during recent tests in the East Texas field.

In drilling in under controlled

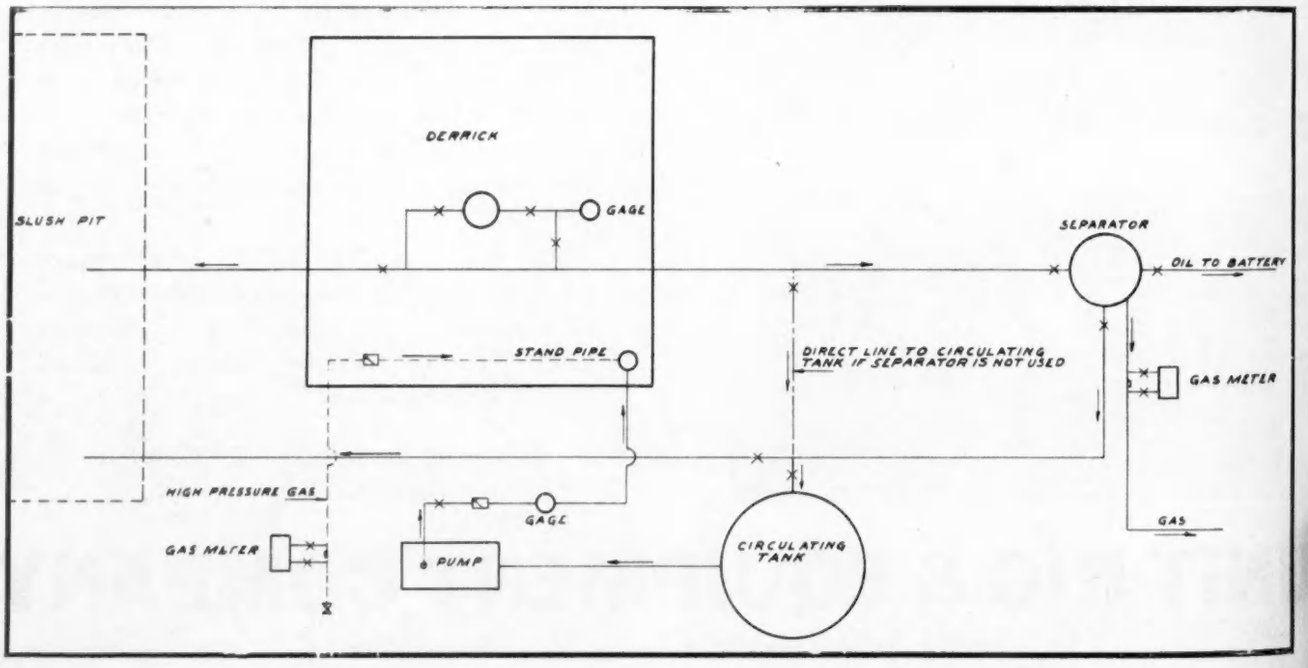

FIGURE 1

Flow diagram of well connections during drilling in operations.

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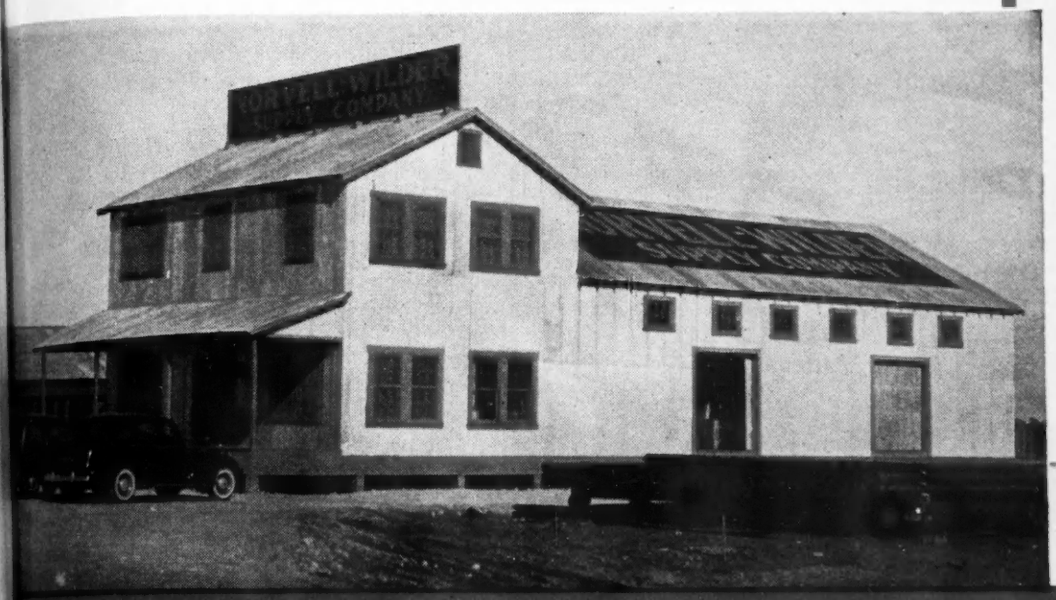

Above is a picture of Norvell-Wilder's newest store at Monahans

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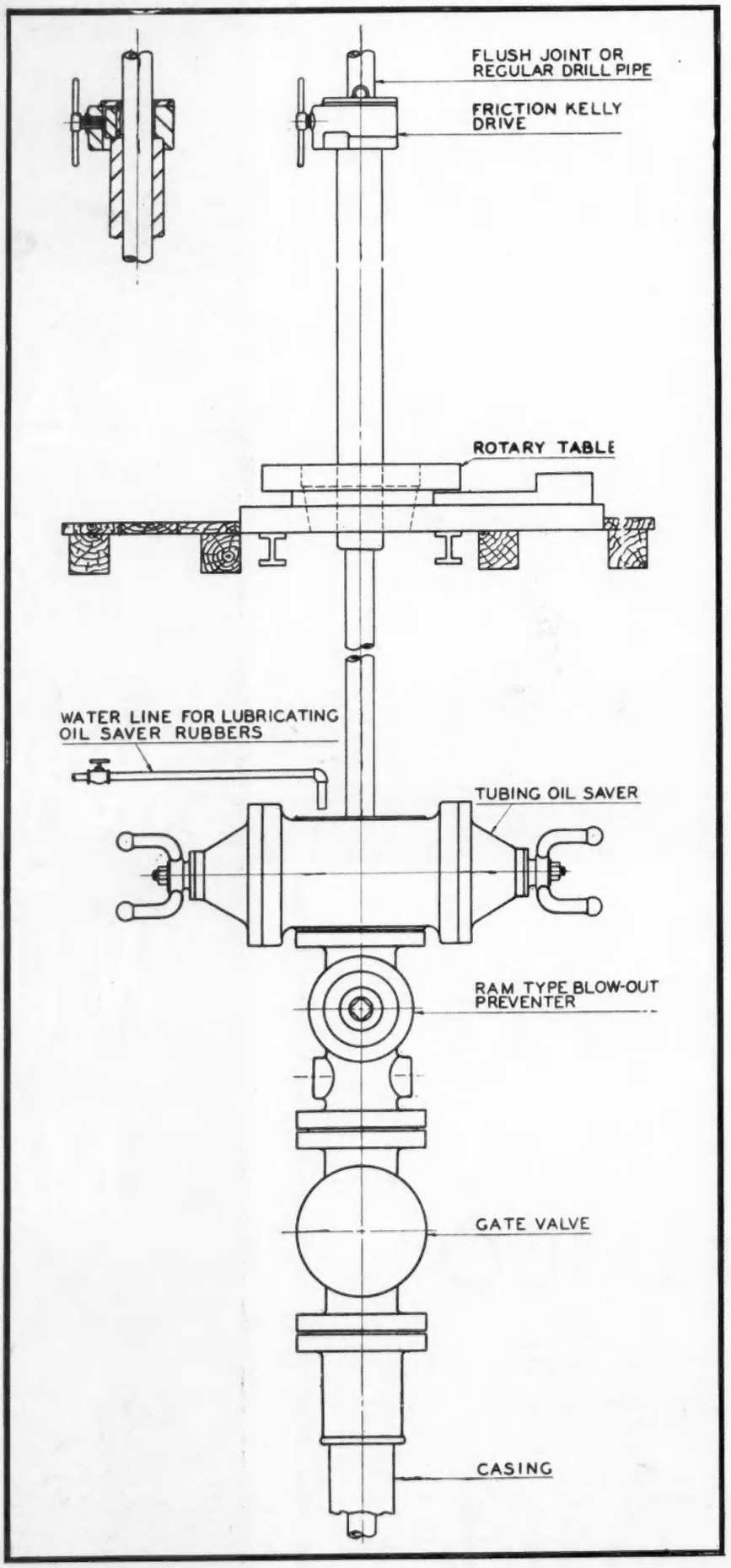

pressure, the producing sands can be accurately located, as increases in the flow rate of oil and gas can be detected easily. As the cuttings are carried immediately to the surface, it enables the operator to determine the location and character of the pay sands and intervening stratas, which is of great importance in determining present and future operating programs of the well.

Due to the rapid removal of the cuttings from the bottom of the hole and to the jetting action of the oil and gas across the cutting edges of the bit, it has been proven that more hole per bit can be made by the use of this method.

Another great advantage lies in the fact that the well starts paying off as soon as the bit taps the producing horizon, as the delay caused by washing in, swabbing, or bailing is omitted.

Figure 1 shows a typical flow diagram of connections during drilling-in operations. Depending on conditions in different localities and individual preferences, slight variations in the piping hook-up shown are made, but the general layout does not deviate much from that shown.

In the method of drilling in under pressure, some type of packing arrangement has to be provided between the drill stem and the casing while the drill pipe is rotated and moved up and down.

Ordinarily the flow pressure is held down to a minimum, in order to avoid having to snub part of the drill pipe in or out of the hole, but the equipment has to be made strong enough to withstand much higher pressures in case of an emergency.

Although in some instances the conventional square kelly joint is used and a pack-off provided for same, in the majority of the cases a joint of flush-joint pipe or standard drill pipe with collars is used as a kelly with a suitable, adjustable gripping device in the rotary to drive the round kelly.

A variety of different tools for this type of work, some of which were very crude and even unsafe, was developed and used during the early stages of this drilling method, but as the importance of controlled drilling grew, equipment manufacturers and operators have cooperated

FIGURE 2
Method of drilling wells with flush joint or regular drill pipe, using friction kelly drive.

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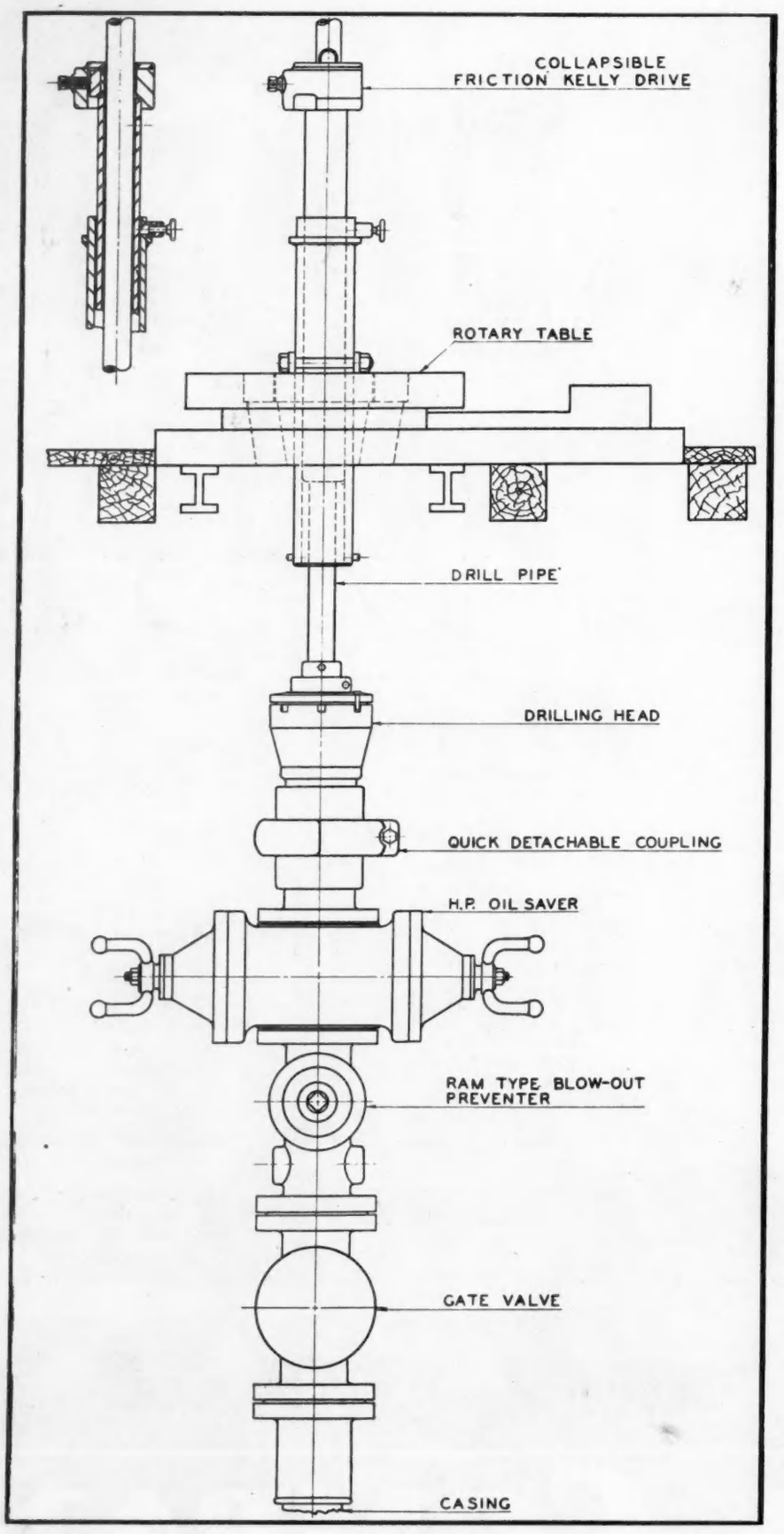
FIGURE 3

Hookup for drilling in high-pressure wells.



in designing more suitable, safer, and more economical equipment for this purpose.

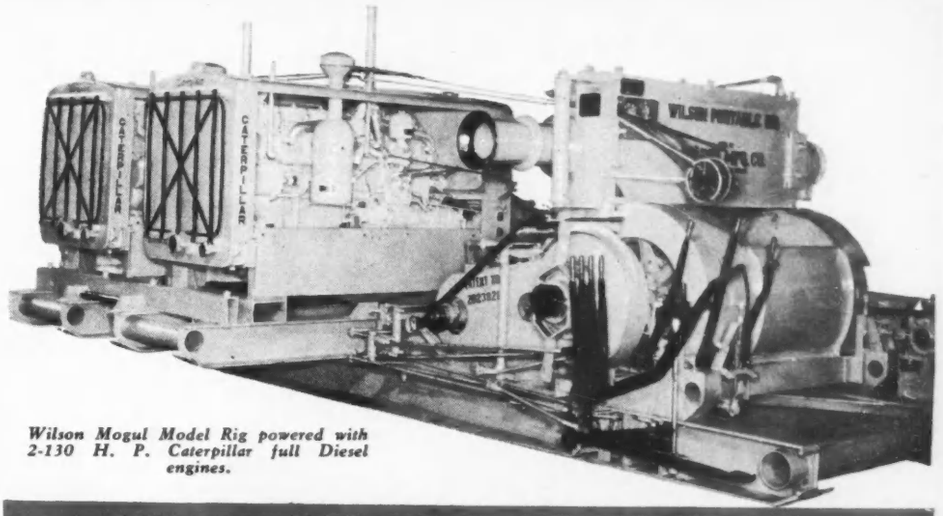
A very simple and economical hook-up, which is now used by many oil companies and contractors, is shown in Figure 2. Usually, immediately after the casing is cemented, the pressure drilling equipment is installed above the blow-out preventer of the drilling Christmas tree, and the piping installation is made during the same period, so that no time is lost in completing the well.

This equipment consists of a high-pressure oil saver, through the rams of which the conventional flush-joint or standard drill pipe with tool joints may be run or pulled against the well pressure without leakage. When drilling ahead, this same oil saver serves as a pack-off around the rotating round kelly, thus eliminating the necessity of a separate packing device for this purpose. When standard drill pipe with tool joints is used, care is taken that the tool joint does not rotate inside of the oil saver rubbers. To prevent this, it is customary to use a long and short joint of drill pipe alternately directly under the joint of pipe which is used as the kelly.

The oil saver consists primarily of a housing in which are two opposed rubber rams, operated by screws from the outside of the housing. The faces of the rubbers are fluted horizontally to provide flexibility and allow pipe collars to pass without leakage. Interlocking tongues and grooves on the faces of the rubbers adjacent to the horizontal flutes assure a leak-proof pack-off at these points when the rubbers are closed around the drill pipe. The lower end of the rubber is provided with a circular groove, forming a sealing lip around the pipe at this point, the sealing effect of which increases with the increase of the well pressure. The rubbers may be retracted in the oil saver housing to permit passage of the bit and other tools having much larger diameters than the drill pipe without removing the oil saver from the Christmas tree. The rubbers are removed easily by simply removing the two end plates on the housing. These oil savers are made very compact, so that they take up a minimum of space, and come in a variety of sizes to tie in with different sizes of casing and Christmas tree fittings.

When the oil saver also is used as a pack-off or stuffing box while rotating the drill pipe, it is obvious that in order to prevent the rubbers from being torn by scarred drill pipe or kelly, a kelly drive should be used

need-



Wilson Mogul Model Rig powered with 2-130 H. P. Caterpillar full Diesel engines.

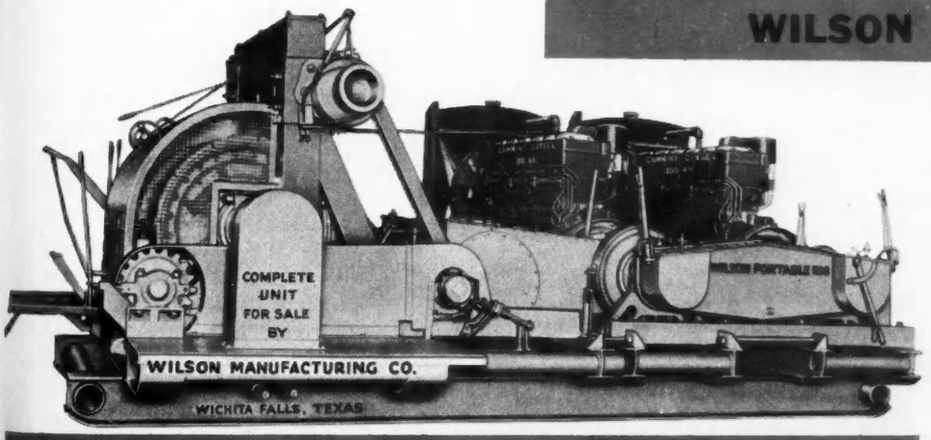
★ **MOGUL TYPE. Rated capacity 3,500 feet. Designed to accommodate engines up to 150 H. P. each. Can be furnished with gas-gasoline or Diesel power units. 38″ diameter drum flanges, 8″ wide, dual, full wrap brakes. Drum is equipped with special rolled steel brake rings with new type fan ribs which provide more efficient air cooling. Equipped with 5″ chrome nickel, heat treated steel drum shaft and 4″ chrome nickel, heat treated steel cathead shaft.**

WILSON MOGUL TYPE RIG

Powered with 2-200 H. P. Cummins full Diesel cold starting engines.

★ **GIANT TYPE. Rated capacity 6,000 feet. Designed to accommodate engines up to 250 H. P. each. Can be furnished with gas-gasoline or Diesel power units. 42″ diameter drum flanges, 10″ wide, dual, full wrap brakes. Drum is equipped with special water circulating rolled steel brake rings. Drum shaft is 6″ chrome nickel heat treated steel and cathead shaft is made of 4″ chrome nickel, heat treated steel.**

WILSON GIANT TYPE RIG



WILSON ATLAS TYPE RIG

Wilson Atlas Model Rig powered with 2-200 H. P. Cummins full Diesel cold starting engines.

★ **ATLAS TYPE. Rated capacity 8,000 feet. Designed to accommodate engines up to 250 H. P. each. Can be furnished with gas-gasoline or Diesel power units. 46″ diameter drum flange and 10″ wide, dual, full wrap brakes. Drum equipped with special rolled steel water circulating brake rings. Equipped with 7″ chrome nickel, heat treated steel drum shaft and with 5″ chrome nickel, heat treated steel cathead shaft. Drum shaft extension for Hydromatic Brake installation is standard equipment.**

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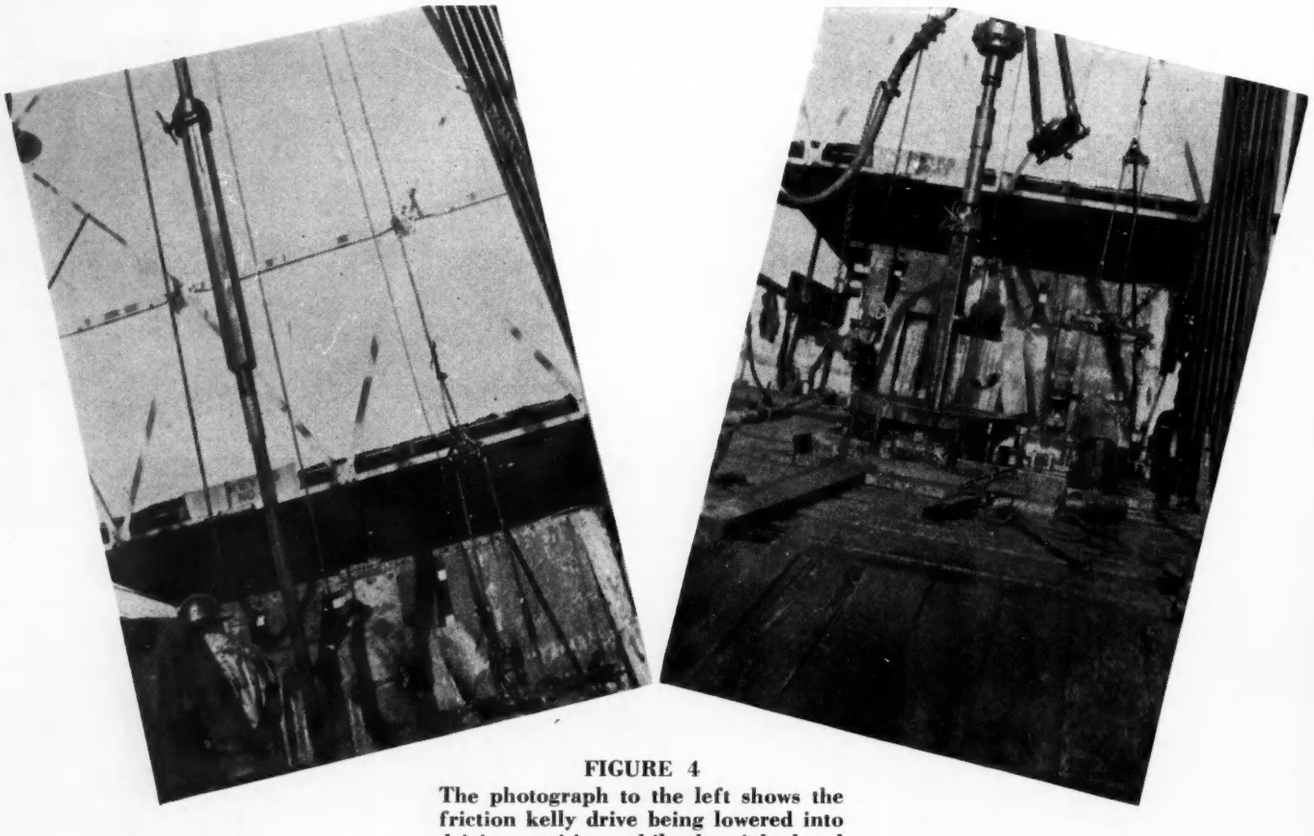

FIGURE 4
The photograph to the left shows the friction kelly drive being lowered into driving position, while the right hand scene shows it in operation.

which grips the round kelly in a positive manner without cutting it to the extent where it would destroy the oil saver rubbers.

One drive on which this objectionable feature has been eliminated is shown in this same diagram (Figure 2) and consists of a short section of regular square kelly bored out to fit different diameters of pipe, at the upper end of which is a gripping arrangement for clamping the drive onto the kelly. A unique arrangement of the three dies in the gripping device eliminates the possibility of the pipe slipping in the drive for either direction of rotation. When ready to drill ahead the oil saver rubbers being closed around the drill stem or the pipe, the drive is clamped onto the joint to be used as the kelly with the lower end of the kelly portion of the drive just entering the square in the rotary table kelly bushing, so that when the rotary turns, the drill pipe through the gripping arrangement on the drive is rotated, and drilling can proceed in the conventional manner until the top of the drive comes in contact with the rotary table. The clamp is then loosened, and the drive moved up the kelly by means of the cat line and again clamped on the kelly, and the assembly is ready to drill again the approximate length of the square portion of the drive. A water line to the top of the rubbers provides water for lubrication at this point.

Where cellar space is limited, and where no derrick substructure is used, even if the rotary table is mounted above the derrick floor, the top of the oil saver very often is close to the bottom of the rotary table, in which case the above described drive can be equipped with a telescoping attachment, which is in fact a long rotary kelly bushing consisting of a square housing which can slide through a special kelly bushing which fits in the same place as the regular rotary kelly bushing. The square hole through this housing fits the square shank of the regular drive and allows the latter to slide in the housing. A clamping device on the housing limits the movement of the housing through the rotary table to any desired or necessary amount. This combination drive, if cellar space is available, enables more hole to be drilled before it is necessary to raise and reclamp the drive. This drive is indicated in Figure 3.

When this hook-up was first used, some operators were skeptical about using the rubber rams both as a pack-off while rotating and to affect a seal when coming out and going in the hole, but improvements in ram design and composition of the rubbers have made this combination a very economical, as well as safe, installation. Pressures up to 1350 pounds, which is much higher than is ever encountered during drilling-in operations, were held with these rubbers during shop tests. As to the durability of these rubbers, on a 4250-foot well in West Texas 340 feet of hole were drilled, and seven round trips with flush-joint pipe were made without any apparent ill effect on the rubbers.

On a 7000-foot well in Edmond, Oklahoma, 143 feet of hole were drilled with the rubbers closed around the drill pipe, while seven round trips were made through them with standard drill pipe with tool joints. Each time a connection was made the rubbers were used to affect a seal around the pipe. The same set of rubbers were used to complete a second well in the same field under approximately the same conditions before it was necessary to replace them.

If the operator does not care to use his oil saver equipment for a pack-off while rotating, or if there is danger of encountering very high pressures during the drilling operation, a separate drilling head or rotating blow-out preventer may be installed above the oil saver by means

and in West Texas

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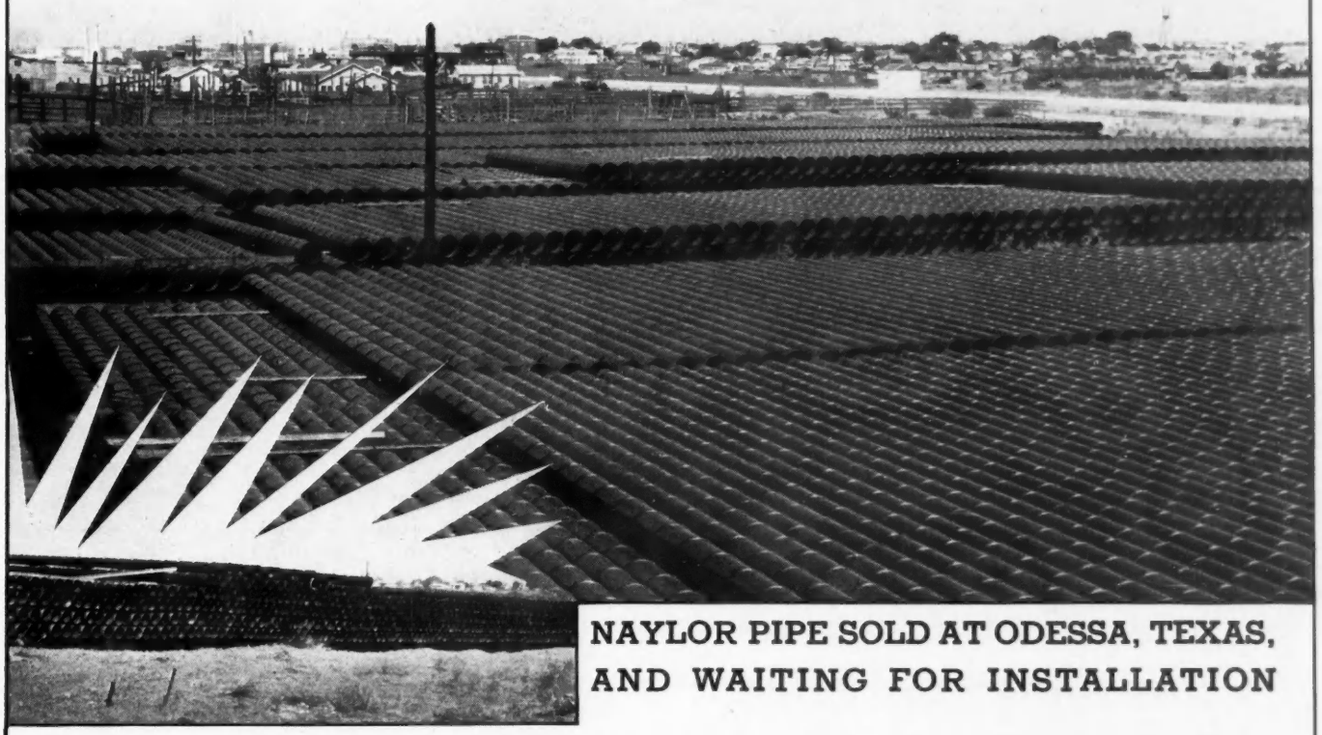

NAYLOR PIPE SOLD AT ODESSA, TEXAS, AND WAITING FOR INSTALLATION

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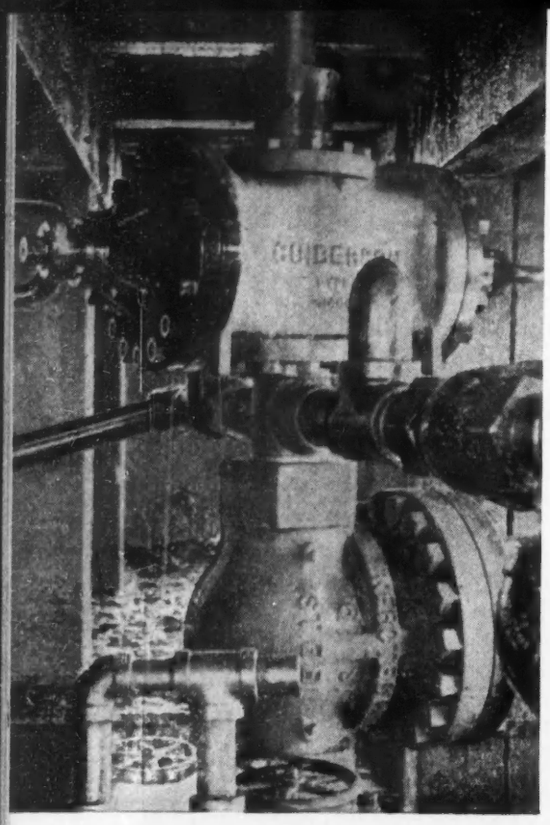


FIGURE 5

A typical installation showing the use of a high-pressure oil saver with retractable rams.

of a quick-changing union, as shown in Figure 3. Stuffing boxes of various designs have been used for this purpose, in most of which the pipe rotates inside of the packing material.

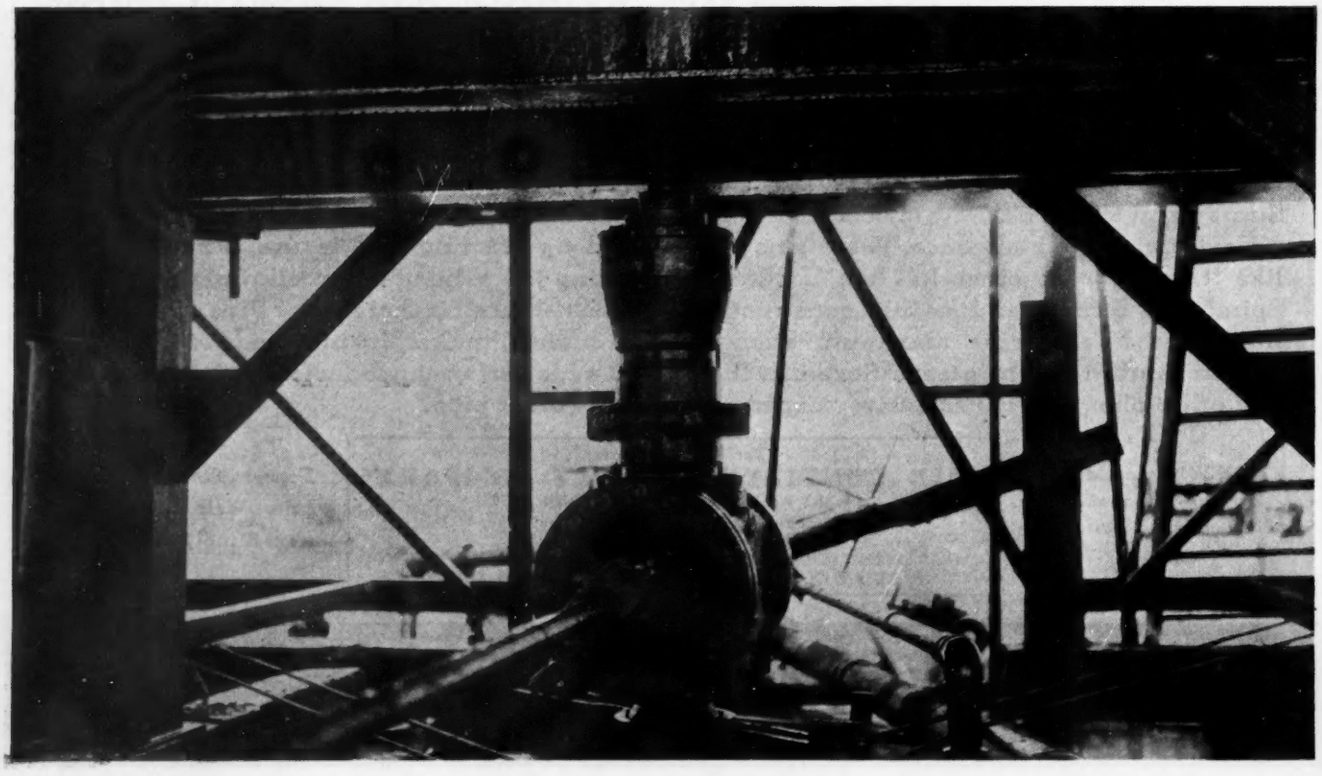
On one drilling head, which has recently been placed on the market, the packing medium rotates with the kelly, and the only wear occurring in the packing is due to the up-and-down movement of the drill pipe. The friction hold between the kelly and the packing rotates the packing sleeve assembly inside the stationary housing of this drilling head. The sleeve is mounted on two opposing, heavy-duty, tapered roller bearings, which in turn are mounted in the housing, and take all the upward or downward load due to the pipe moving vertically through this head. These bearings are mounted in a dust-proof and oil-tight compartment in the housing and run in a bath of oil.

The aligning cushion vulcanized between the packing stuffing box and the sleeve allows for misalignment of the kelly in the drilling head and absorbs the shock load due to the kelly whip.

When this tool is used with flush-joint pipe, it is only necessary to remove it from the oil saver below the head when the bit is removed from the hole. While drilling, the pipe may be raised or lowered through this head without having to close the oil saver rams, which feature naturally results in largely extending the life of the oil saver rubbers.

When used with standard drill pipe, one joint of this pipe is usually used as the kelly. When a connection has to be made, the quick-changing union is loosened, and the head, supported by the lower tool joint on the kelly, is removed with the kelly through the rotary table and replaced immediately after the connection is made. When going in or coming out of the hole with the drill pipe, the drilling head is removed with the kelly, and the oil saver rubbers are closed around the drill pipe, so that the latter can be pulled under pressure without leakage.

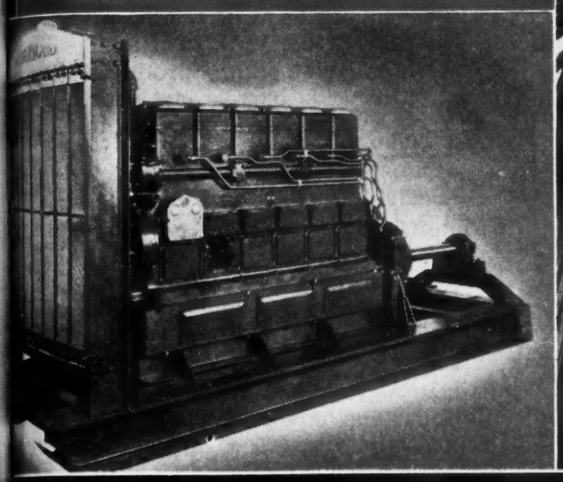
The same method with the same equipment is also extensively used for cleaning out wells after shooting with nitroglycerine, especially in some parts of West Texas. The large amount of high-pressure gas used aerates the oil, greatly increases the velocity of the column which loosens the cuttings in the hole, and carries them to the surface much faster. This method of cleaning out takes about one-tenth of the time formerly spent on such work, while in practically all cases better wells are made.



A high-pressure oil saver with rotating drilling head attached, as used in the Goldsmith area of West Texas.

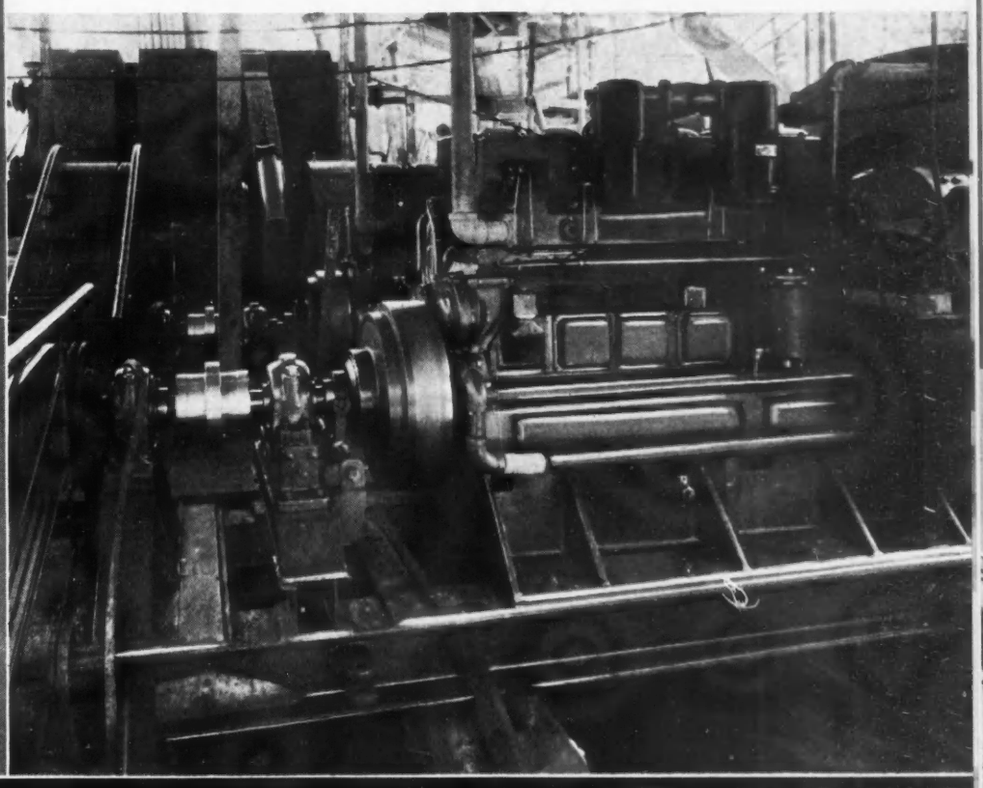
42 carloads

Cummins Dependable Diesels now in use for powering rotary rigs and cable tool drilling in the west Texas oil fields. Repeat orders tell the story.

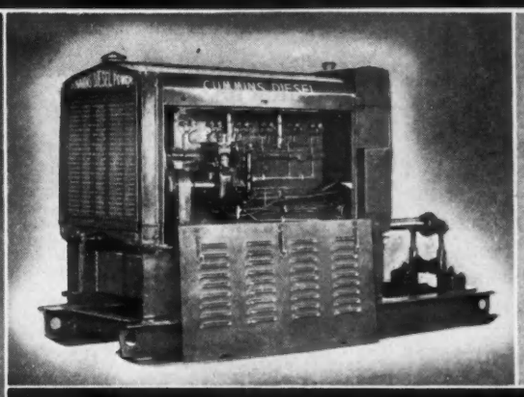


ABOVE: Industrial Models K 6, KO 6, and L 6. Model K 6, 150 h. p. Model KO 6, 180 h. p. Model L 6, 200 h. p.

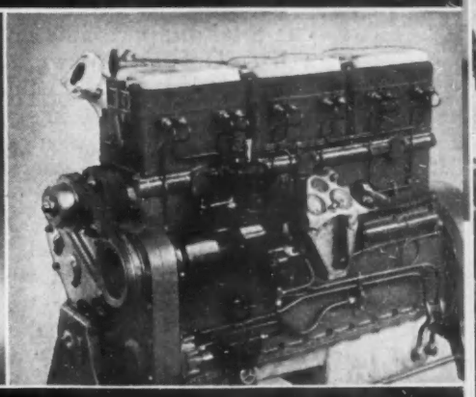
BELOW: A typical Cummins Diesel powered rig. These engines assure the driller the lowest power cost per foot of hole. They are cold starting, smooth running, economical in fuel, lubricating oil and upkeep.

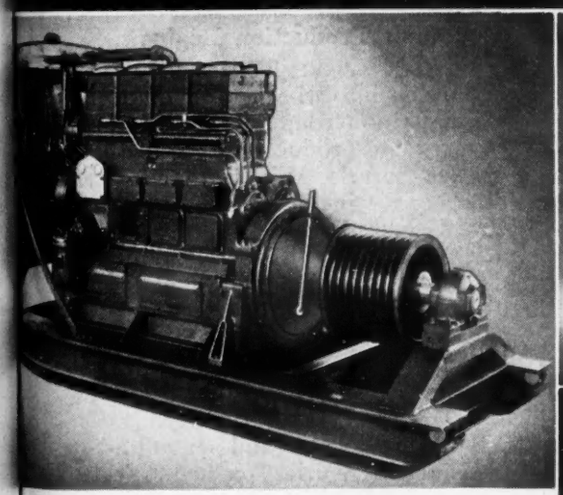


BELOW: Industrial Power Unit, Model HP 601. Rated at 85 to 125 h. p.



BELOW: Cummins Diesel Industrial Unit, Model HI 6. Rated at 85 to 125 h. p.





ABOVE: Model KO 4. With outboard bearing and pulley for V-belt drive. Built in three sizes: K, KO, and L, from 68 to 132 h. p.

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Westex-Newmex Yield Nears Billion Barrels

By L. J. LOGAN, Associate Editor

ALTHOUGH West Texas and New Mexico are comparatively new oil producing districts, having had important crude output for only a little over 10 years, the closely related two areas already have made impressive records in cumulative production.

Together, they have almost qualified for the distinction of having produced a billion barrels of oil, a distinction that is comparatively rare among the various major producing districts of the United States.

Closely related areas have impressive record of crude oil production, despite fact development has been under way only a little over 10 years.

Nearly Billion Barrels

Up to July 1, this year, the two districts, since their beginnings as oil areas, had produced 974,716,998 barrels of crude oil.

Of that total, West Texas accounted for 832,513,192 barrels, while New Mexico's part was 142,203,806 barrels.

Almost Same as Coastal Texas

The total of approximately a billion barrels for the two districts represents almost as much oil as the Texas Gulf Coast has yielded in its whole history of nearly 40 years.

The total is closely comparable with the combined output of North Texas and West Central Texas, spread out over the past 30 years. It is considerably more than the whole output of Louisiana, extending over a period of 35 years. It is more oil than Pennsylvania has produced since the American oil industry started there almost 80 years ago.

West Texas and New Mexico cumulative production has been nearly the same as the all-time production of Kansas, which embraces a period of about 50 years. The two districts have produced about the same amount of crude oil as Wyoming, Montana, Colorado and Arkansas, combined.

It was not until 1924 that West Texas passed its first million barrels in crude oil production, having yielded small quantities in 1922 and 1923 and then producing 1,539,895 barrels in 1924.

New Mexico had a little recorded production in 1924, but did not show a million barrels of output until 1925, in which year the production was 1,060,000 barrels.

West Texas and New Mexico Production, By Years

Barrels of Crude Oil

YEAR	West Texas	New Mexico	Total West Texas and New Mexico
[A]1902-1920	[A]	.....	.....
1921	[A]	.....	.....
1922	34,010	.....	34,010
1923	184,570	.....	184,570
1924	1,539,895	98,000	1,637,895
1925	9,783,760	1,060,000	10,843,760
1926	15,325,244	1,666,000	16,991,244
1927	52,439,286	1,226,000	53,665,286
1928	119,377,012	1,166,170	120,543,182
1929	133,258,385	1,961,386	135,219,771
1930	108,172,385	10,352,373	118,524,758
1931	77,548,724	15,359,083	92,907,807
1932	63,061,992	12,446,365	75,508,357
1933	54,085,846	14,174,950	68,260,796
1934	48,099,000	16,833,321	64,932,321
1935	53,818,483	20,211,349	74,029,832
1936	60,484,000	26,816,609	87,300,609
1937 (6 mos.)	[B]35,300,600	[B]18,832,200	[B]54,132,800
Total to July 1, 1937	832,513,192	142,293,806	974,716,998

[A] Small production, but no record available.
[B] Calculated by the OIL WEEKLY from weekly reports of the American Petroleum Institute

From those modest beginnings, the two districts rose to major importance as oil producing areas, West Texas having produced over 100,000,000 barrels in several different years (1928, 1929, 1930), and New Mexico having produced nearly 27,000,000 barrels last year, while a new all-time record is in the making this year.

Early West Texas Fields

The first recorded production for West Texas was that of 34,010 barrels in the Westbrook area, Mitchell County, in 1922. In the following year a second field, Big Lake, in Reagan County, added a little production. Those two areas continued the only producing fields in 1924. But in 1925 a third field, the World pool, Crockett County, contributed some production, and the whole district's output for the year was 9,783,760 barrels, compared with the 1,539,895 barrels of 1924.

Major Production Begins

In 1926 West Texas emerged definitely into the major district class, as numerous fields were discovered and production rose to 15,325,244 barrels. Within that year, discoveries included the prolific Yates field, Pecos County; Hendrick field, Winkler County; Church-Fields and McCamey-Taylor, in Crane and Upton Counties; and other new fields included the Chalk area, Howard-Glasscock Counties; Judkins, Ector County, and Wheat, Loving County.

Those new fields and several additional discoveries pushed West Texas production up sharply to 52,439,286 barrels in 1927 and to 119,377,012 barrels in 1928. The large quantities of production in those years were made possible by the construction of several major trunk pipe lines into the area, which had demonstrated convincingly that its oil reserves justified the heavy investments needed in

Texas and New Mexico

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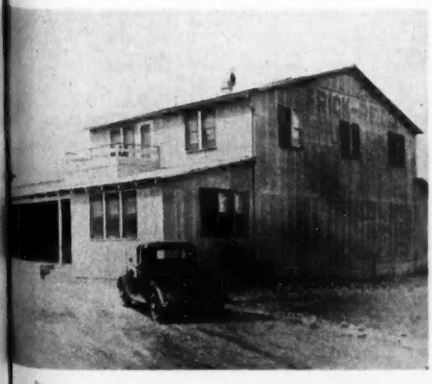
Wm. Loyd, Local Store Manager
E. G. Purman, Salesman

ODESSA, TEXAS, STORE
Established August, 1934
A. L. Henderson, District Sales Manager
V. A. Nelson, Local Store Manager
R. R. VanSant, Salesman



CKENRIDGE, TEXAS, STORE
Established September, 1920
Crenshaw, Local Store Manager

HOBBS, NEW MEXICO, STORE
Established May, 1930
W. F. Morehart, Local Store Manager
F. L. McFarland, Salesman

McCAMEY, TEXAS, STORE
Established March, 1937
R. L. Daniel, Local Store Manager

providing pipe lines to tide-water, some hundreds of miles away.

In 1929, with Big Lake deep production; Pecos Valley, and Taylor-Link, Pecos County; Skelly-Grayson, Reagan County; Waddell-Tubb, Crane County; and other fields augmenting the output from older producing area, the West Texas total production rose to an all-time peak of 133,258,385 barrels.

In 1930 production was curtailed throughout the country in an effort to cut down on excessive

West Texas Crude Oil Production, by Fields, by Years

Complete Production History of District, in Barrels of 42 U. S. Gallons

(Sources.—Except as otherwise indicated in footnotes, figures are from records of oil companies.)

YEAR	Addis-Odessa Ector County	Bennett Yoakum County	Bert Winkler County	Big Lake Shallow Reagan County	Big Lake Deep Reagan County	Brown-Altman Winkler County	Church-Fields-McElroy Crane-Upton Counties	Cowden Ector County	Deep Rock Andrews County	Duggan Cochran County	Eaves Winkler County	Foster Ector County
[A]1902–1922	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1923	.....	.....	.....	[E]18,425	.....	.....	.....	.....	.....	.....	.....	.....
1924	.....	.....	.....	[E]1,078,790	.....	.....	.....	.....	.....	.....	.....	.....
1925	.....	.....	.....	[E]8,981,545	.....	.....	.....	.....	.....	.....	.....	.....
1926	.....	.....	.....	[F]11,243,225	.....	.....	467,043	.....	.....	.....	.....	.....
1927	.....	.....	.....	9,043,685	.....	.....	23,828,460	.....	.....	.....	.....	.....
1928	.....	.....	.....	6,814,069	26,694	.....	20,880,837	.....	.....	.....	.....	.....
1929	.....	.....	.....	5,651,777	923,751	.....	13,773,314	.....	.....	.....	.....	.....
1930	.....	.....	.....	4,452,782	2,756,775	.....	11,610,260	7,168	.....	.....	.....	.....
1931	.....	.....	.....	3,256,859	6,424,701	.....	6,350,901	22,319	.....	.....	.....	.....
1932	.....	.....	.....	3,100,135	5,692,192	.....	5,663,400	20,375	.....	.....	.....	.....
1933	113,011	.....	.....	2,416,757	4,234,773	.....	4,631,855	114,057	13,996	.....	.....	.....
1934	191,838	.....	.....	2,060,908	2,488,054	103,503	4,482,036	385,658	174,234	.....	.....	.....
1935	199,785	.....	.....	1,957,050	1,616,878	195,981	4,076,305	1,236,396	405,739	.....	.....	.....
1936	131,000	7,000	10,000	1,971,000	981,000	.....	4,509,000	2,166,000	390,000	[K]	2,000	102,000
1937 (5 mos.)	53,000	25,000	27,000	763,000	378,000	.....	1,926,000	1,192,000	190,000	[K]9,000	13,000	186,000
Total	688,634	32,000	37,000	62,810,007	25,522,818	299,484	102,199,411	5,143,973	1,173,969	9,000	15,000	288,000

YEAR	Gold-smith Ector County	Harper Ector County	Hend-erson Winkler County	Hend-ricks Winkler County	[G]Howard Glasscock Counties	Iatan Mitchell County	Iatan East Howard Mitchell County	Ira Scurry County	John-son Ector County	Jordan Crane County	Judkins (Penn-Connell) Ector County	Kermit Winkler County	Key-stone Winkler County	Leck-Daugh-erty	Mason Loving County	McCamey Taylor Upton-Crane Counties
[A]1902–1920	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1921	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1922	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1923	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1924	.....	.....	.....	.....	.....	.....	.....	[B]	.....	.....	.....	.....	.....	.....	.....	.....
1925	.....	.....	.....	.....	.....	.....	.....	[B]	.....	.....	.....	.....	.....	.....	.....	[B]
1926	.....	.....	.....	.....	102,162	.....	.....	[B]	.....	.....	675	.....	.....	.....	.....	[C]1,907,445
1927	.....	.....	.....	.....	1,156,406	.....	.....	[B]	.....	.....	2,753	.....	.....	.....	.....	7,507,722
1928	.....	.....	.....	.....	4,907,263	.....	.....	[B]	.....	.....	2,872	.....	.....	.....	.....	4,677,712
1929	.....	.....	.....	.....	15,098,997	.....	.....	[DC]29,079	.....	.....	14,095	.....	.....	.....	.....	3,477,928
1930	.....	.....	.....	.....	11,314,178	.....	.....	[D]8,586	.....	.....	3,177,095	.....	.....	.....	.....	2,881,626
1931	.....	.....	.....	.....	9,846,644	.....	.....	[D]11,430	.....	.....	2,414,268	.....	.....	.....	.....	1,881,990
1932	.....	.....	.....	.....	6,650,645	.....	.....	[D]9,514	.....	.....	1,606,618	.....	.....	.....	.....	1,524,996
1933	.....	6,570	.....	.....	5,455,973	.....	.....	[D]8,737	.....	.....	1,724,791	[L]	.....	.....	.....	1,476,413
1934	.....	24,662	.....	.....	5,617,102	.....	.....	[D]8,973	.....	.....	1,998,946	6,245,117	.....	198,799	.....	1,543,100
1935	52,420	32,870	.....	[L]	6,834,386	.....	.....	.....	12,880	.....	2,056,510	5,602,196	92,633	184,375	.....	2,212,602
1936	419,000	36,000	205,000	4,721,000	6,699,000	.....	2,287,000	.....	11,000	.....	2,181,000	2,958,000	485,000	158,000	.....	3,315,000
1937 (5 mos.)	756,000	37,000	527,000	1,829,000	2,539,000	.....	1,060,000	.....	5,000	4,000	921,000	2,746,000	398,000	65,000	20,000	1,893,000
Total	1,227,420	137,102	732,000	6,550,000	76,224,756	.....	3,347,000	76,319	28,880	4,000	16,100,623	17,551,313	975,633	606,174	20,000	34,299,534

YEAR	McKnight Crane County	Means Andrews County	Mertzon Irion County	Netter-ville Pecos County	Parker Andrews County	Pecos County Outside Yates Unclassified	Pecos Valley Pecos County	Phillips-Pryor Pecos County	Reagan County Unclassified	Richardson O'Brien	Rowan Tong Pecos County	Sand Hills (Deep) Crane County	Sand Hills (Shallow) Crane County	Sayre Winkler County
[A]1902–1920	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1921	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1922	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1923	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1924	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1925	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1926	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1927	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1928	.....	.....	.....	.....	.....	.....	1,275	.....	.....	.....	.....	.....	.....	.....
1929	.....	.....	[B]	.....	.....	.....	40,792	[D]3,120	.....	.....	1,526	.....	.....	.....
1930	.....	.....	[C]28,560	.....	.....	.....	77,773	.....	.....	.....	.....	.....	.....	.....
1931	.....	.....	21,437	.....	.....	.....	69,119	.....	.....	.....	.....	.....	.....	.....
1932	.....	.....	10,382	.....	.....	.....	101,073	[D]2,418	.....	.....	.....	.....	.....	.....
1933	.....	.....	7,633	.....	.....	.....	80,347	7,535	.....	.....	.....	.....	.....	.....
1934	.....	22,572	8,797	.....	.....	.....	60,005	1,484	.....	8,393	.....	.....	11,476	12,055
1935	2,053	206,041	15,455	.....	10,441	.....	99,694	1,075	.....	7,686	.....	.....	7,645	553,708
1936	4,000	460,000	14,000	56,000	14,000	.....	306,000	.....	.....	.....	.....	14,000	85,000	.....
1937 (5 mos)	.....	336,000	6,000	42,000	5,000	.....	188,000	.....	.....	.....	.....	14,000	150,000	.....
Total	6,053	1,024,613	112,264	98,000	29,441	.....	1,024,078	15,632	.....	16,079	1,526	28,000	254,121	565,763

See page 90 for footnotes.

[*Table continued on page 90*]

A SPECIAL CAMERON TYPE SDA BLOWOUT PREVENTER FOR OTIS PRESSURE CONTROL HOOKUPS

Figure 1

Figure 2

DESCRIPTION

This special control unit embraces a standard 7" O.D. Cameron Type SDA Pressure Operated Blowout Preventer, Duprene packed throughout, with special manifolding to Otis Pressure Control, Inc., specifications. Also, with special pressure by-pass provided through each ram and ram thrust plate, below self-feeding ram packing elements. This special unit is used below the two additional ram-type pressure control units which constitute the standard Otis Hook-Up, and serves as a reserve safety unit providing more positive control over annular space pressures than any other available control device.

SPECIAL FEATURES

(a) Self-centering rams equipped with self-feeding ram packing elements can be closed instantly by releasing well pressure from opening side of ram operating pistons.

(b) In event ram packing in two upper control heads starts to leak, due to sustained pipe movement through closed rams, the rams of the special control unit may be closed quickly. When rams of special control unit are closed, they can not again be re-opened until packing in one or both of the control units above has been reconditioned to hold pressure without leakage.

(c) Should the control manifolds become damaged or broken for any reason, well pressure automatically and instantly closes the rams of the special control unit, holding the well shut-in until repairs have been made.

(d) The rams of the special control unit may be opened or closed instantly by remote control from any point of vantage.

OPERATION

(1) Well pressure is taken from a point above the rams and introduced to the opening side of the ram operating pistons through the special manifold, which includes a 3-way control valve. See Figure 1.

(2) Pressure by-pass holes are drilled through the rams and ram thrust plates, below self-feeding ram packing elements, which permits full well pressure to be exerted on the closing side of the ram operating pistons.

(3) Well pressure on face of rams, plus well pressure on opening side of ram operating pistons, tends to hold rams open. Well pressure on closing side of ram operating pistons tends to force rams closed. Area exposed to closing pressure is less than area exposed to opening pressure by the area of the ram locking screws. Thus, rams are held open automatically by the unbalance of areas exposed to opening and closing pressures.

(4) In the event of an emergency, rams may be closed instantly by operating 3-way control valve so that opening pressure discharges to atmosphere. 3-way valve cuts off opening pressure source, and releases accumulated pressure on opening side of ram operating pistons.

(5) Before rams may be opened again, control units above the Special Type SDA Preventer must be closed pressure tight. Needle valve controlling pressure by-pass tube (See Figure 2) may then be opened to reintroduce well pressure into vertical bore of SDA Preventer above the closed rams. By operating 3-way control valve so well pressure is again applied to opening side of ram operating pistons, closing pressure is unbalanced and rams may be opened.

(6) High-pressure needle valve controlling by-pass tube (Figure 2) remains closed at all times, except when it is desired to re-introduce well pressure above rams in order to open them.

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crude stocks, and West Texas fields were held down to 108,172,385 barrels output for the year.

In 1931 the production curtailment continued, and drilling was sharply reduced over the whole United States, resulting in a decline of the West Texas crude output to 77,548,724 barrels.

Continued curtailment of production and drilling brought further declines of yearly crude output in West Texas to 63,061,992 barrels in 1932, to 54,085,846 barrels in 1933, and to a post-depression minimum of 48,099,000 barrels in 1934.

Upward Trends Resumed

Increased demand for petroleum stimulated drilling and production in 1935, and West Texas production rose to 53,818,483 barrels; and further improvements in general conditions in 1936 pushed the production of the district upward to 60,484,000 barrels.

In 1937 the upward trend of production and drilling have continued over most districts of the United States, and West Texas has shown conspicuous increases. In the first half of 1937, the district's crude oil production of 35,300,600 barrels was 13 percent greater than in the similar period last year; while drilling activity was up 106 percent, as completions for the half year of 1937 numbered 1349 wells, compared with 656 in the opening half of 1936.

As drilling has expanded in West Texas in the past few years, there has been remarkable success in discovering new fields. Discov-

West Texas Crude Oil Production, by Fields, by Years—(Continued)

YEAR	Scarborough Winkler County	Scharbauer Ector County	Seminole Seminole County	Skelly-Grayson Regan County	Skelly-Halley	Taylor-Link Pecos County	Toborg Pecos County	Todd Crockett County	Tubb Crane County	Waddell (Gulf) Crane County	Waddell-Tubb Unclassified Crane County	Ward County Unclassified
[A]1902–1920	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1921	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1922	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1923	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1924	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1925	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1926	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	[B]	.....
1927	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	[C]2,993	.....
1928	.....	.....	.....	[B]	.....	.....	.....	.....	.....	.....	7,212	1,256
1929	.....	.....	.....	[C]59,414	.....	551,092	.....	.....	.....	.....	15,252	438,162
1930	.....	.....	.....	59,537	.....	1,497,773	463,799	.....	.....	.....	11,365	908,537
1931	.....	.....	.....	48,292	.....	499,991	591,544	.....	.....	.....	12,728	1,248,519
1932	.....	.....	.....	44,065	.....	286,900	502,207	[A]	.....	.....	10,605	1,923,337
1933	.....	.....	.....	43,628	.....	239,835	458,360	[A]	.....	.....	5,112	2,703,353
1934	807,128	.....	.....	65,257	16,033	376,431	474,077	12,133	.....	553	.....	3,581,047
1935	798,977	4,614	.....	66,426	76,973	441,493	694,467	3,589	.....	94,061	.....	6,204,085
1936	648,000	.....	.....	61,000	372,000	438,000	844,000	4,000	.....	754,000	.....	9,077,000
1937 (5 mos.)	279,000	.....	1,000	25,000	239,000	159,000	349,000	.....	.....	308,000	.....	5,196,000
Total	2,533,105	4,614	1,000	472,619	704,006	4,490,515	4,377,454	19,722	.....	1,156,614	65,267	31,281,296

YEAR	Webb-Ray Upton County	Westbrook Mitchell-Scurry County	Westbrook Iatan Mitchell County	Wheat Loving County	White-Baker Pecos County	Winkler County Unclassified	World Crockett County	Yates Pecos Crockett Counties	Unclassified	Total West Texas
[A]1902–1920	.....	.....	.....	.....	.....	.....	.....	.....	.....	[A]
1921	.....	.....	[H]	.....	.....	.....	.....	.....	.....	[H]
1922	.....	.....	[E]34,010	.....	.....	.....	.....	.....	.....	34,010
1923	.....	.....	[E]166,145	.....	.....	.....	.....	.....	.....	184,570
1924	.....	.....	[E]461,105	.....	.....	.....	.....	.....	.....	1,539,895
1925	.....	.....	[E]798,895	.....	.....	.....	[E]3,320	.....	.....	9,783,760
1926	.....	.....	1,264,845	2,168	.....	5,178	326,718	5,785	.....	15,325,244
1927	.....	.....	1,514,557	17,282	.....	3,650,295	614,071	5,098,062	.....	52,439,286
1928	.....	.....	1,087,127	59,953	.....	57,746,889	991,456	22,172,397	.....	119,377,012
1929	.....	.....	960,381	251,683	.....	50,050,973	790,448	41,126,601	.....	133,258,385
1930	.....	.....	808,487	670,078	.....	26,448,867	635,485	40,353,654	.....	108,172,385
1931	.....	.....	669,171	1,250,774	.....	15,354,427	510,315	27,063,295	.....	77,548,724
1932	.....	.....	578,239	1,125,145	.....	10,767,947	415,418	23,026,381	.....	63,061,992
1933	.....	.....	728,587	924,423	.....	8,138,602	304,127	20,247,371	.....	54,085,846
1934	.....	.....	820,904	794,315	.....	.....	242,406	15,261,004	.....	48,099,000
1935	589	.....	1,513,010	706,883	982	.....	320,777	15,218,753	.....	53,818,483
1936	.....	327,000	.....	604,000	2,000	.....	395,000	12,261,000	.....	60,484,000
1937 (5 mos.)	.....	138,000	.....	225,000	.....	.....	200,000	4,620,000	.....	30,042,000
Total	589	465,000	11,405,463	6,631,704	2,982	172,163,178	5,749,541	226,454,303	.....	827,254,592

[A] The annual volumes of *Mineral Resources* embodied the following information, in addition to above figures: in 1902 oil and gas showings and small production (no records available) were reported in Brewster County, six miles east of Terlingua; in El Paso County, 20 miles north of Van Horn; in Pecos County, 15 miles northeast of Fort Stockton; in Reeves County, in the Pecos River Valley, nine miles north of Toyah. In 1912 there was again a similar report for Brewster County. In 1917 gas production was reported in Tom Green County, on the Harris Ranch, six miles north of San Angelo.

[B] Production included below with first figure shown.

[C] Includes production of previous years marked "B".

[D] From annual volumes of *Yearbook* of National Oil Scouts' Association.

[E] Based on figures compiled weekly by THE OIL WEEKLY; the yearly figures having been published originally in annual statistical issues.

[F] Based on weekly reports of the American Petroleum Institute, the yearly figures having been calculated by THE OIL WEEKLY and published in annual statistical issues.

[G] Howard-Glasscock Counties represent the field consisting of the following closely related pools: Chalk, discovered 1926; Settles, discovered 1927; Roberts; Phillips Coffee; Kirby; Deman; McDowell, discovered 1929; and others.

[H] Small production but no record available.

[I] Ward County includes: Shipley-Monroe pool, discovered 1928; and Bennett, Grand Falls, Hayzlett, and O'Brien-Hutchings, all discovered in 1929.

[J] Winkler County unclassified includes Kermit (Hendrick) field, discovered in 1926; Leck; Scarbrough; and Richardson-O'Brien, discovered in 1933.

[K] Production of last 3 months of 1936 included with 1937.

[L] Early production shown under Winkler County Unclassified.

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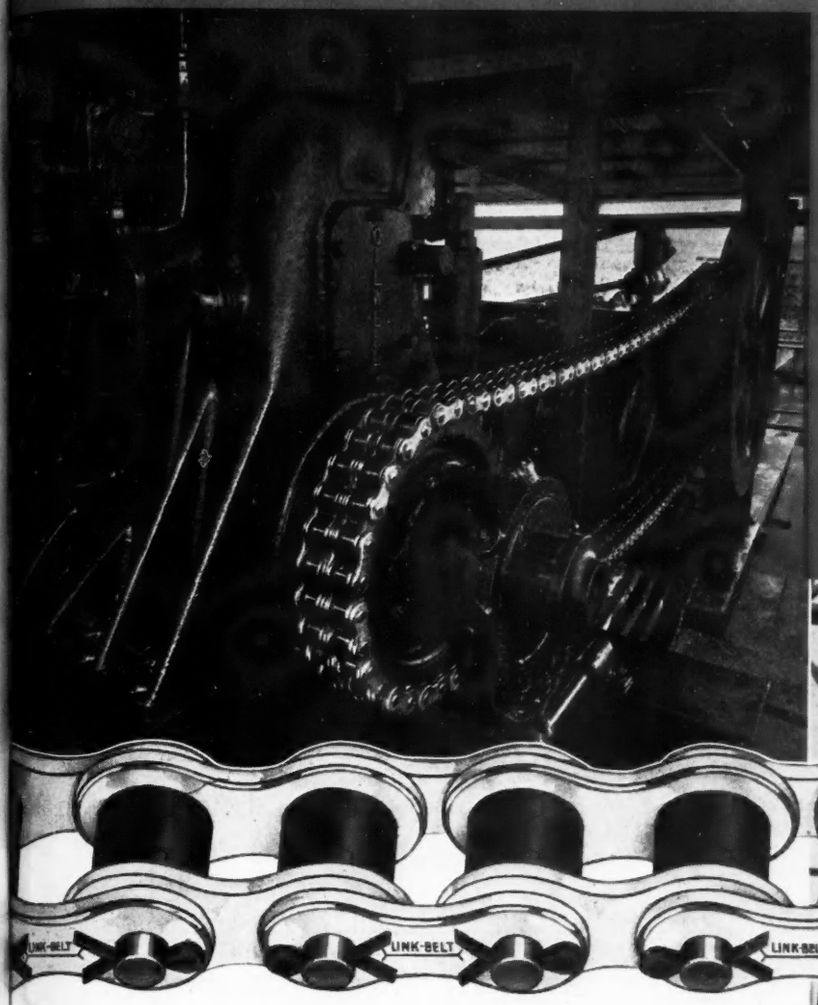

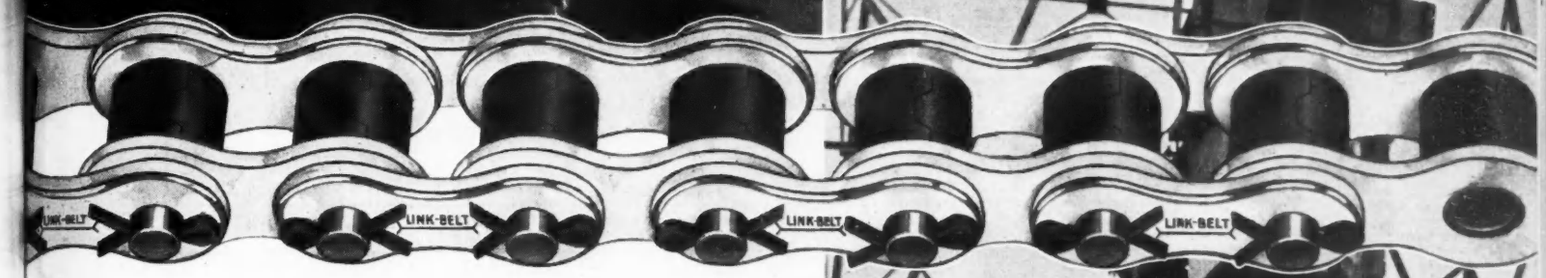

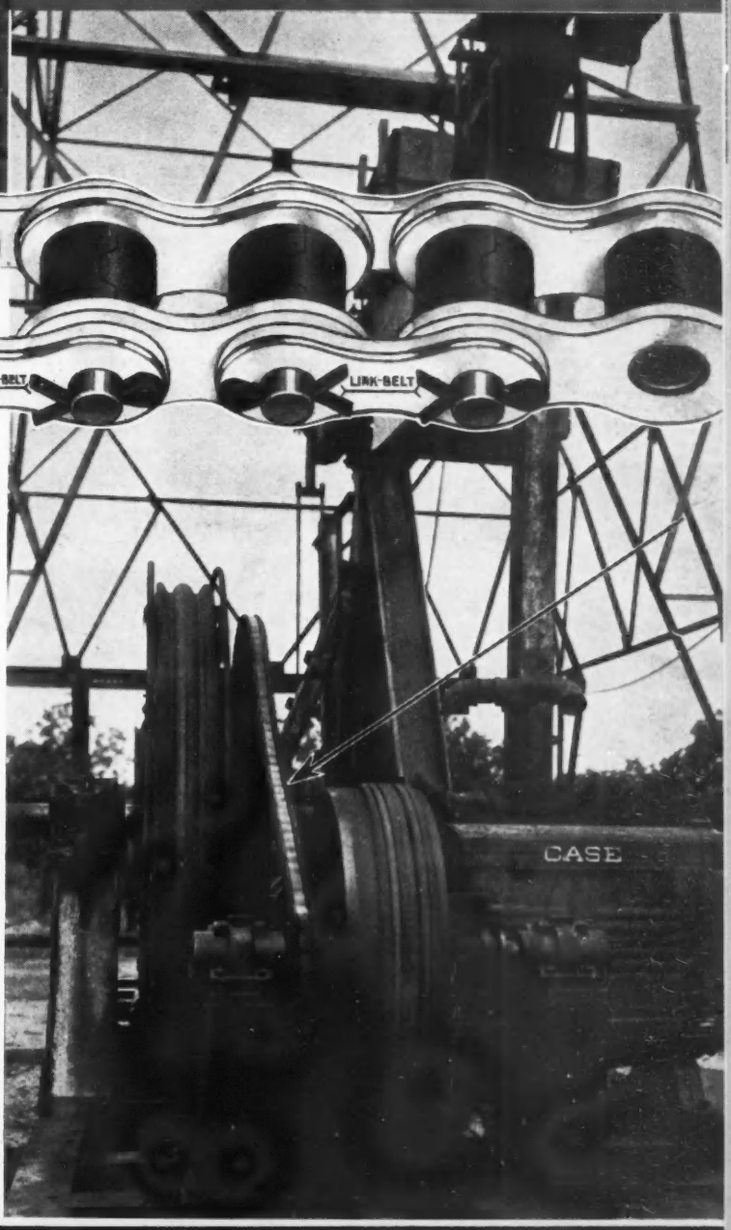

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eries in 1933 included: Addis-Odessa, Ector County; Deep Rock, Andrews County; and Harper, Ector County. Fields found in 1934 included: Brown-Altman, Winkler County; Means, Andrews County; Todd, Crockett County; Sayre, Winkler County; and various others. The discoveries of 1935 included: Goldsmith and Johnson, Ector County; Keystone, Winkler County; McKnight, Crane County; Parker, Andrews County; Scharbauer, Ector County; White-Baker, Pecos County; Webb-Ray, Upton County; and others. In 1936 discoveries included: Bennett, Yoakum County; Seminole, Gaines County; Foster, Ector County; Bert, Eaves and Henderson, Winkler County; Duggan, Cochran County; Netterville, Pecos County; Sand Hills Deep (Ordovician) production, Crane County.

So far in 1937, West Texas oil field discoveries have included: Jordan, Crane County, and Mason, Loving County.

Early New Mexico Fields

The earliest production officially recorded for New Mexico was that of 98,000 barrels in 1924, nearly all of which came from the Hogback field, San Juan County, while the rest was furnished by the Rattlesnake field, in the same county, located in the northwest portion of the state.

In 1925 New Mexico became more important in oil production when the southeastern portion of the state entered the picture, with the Artesia field, Eddy County, contributing 748,000 barrels and pushing the state's production for the year to 1,060,000 barrels. In the same year, the Bloomfield pool, San Juan County, began contributing to the production of the northwestern district of the state.

In 1926 the production of New Mexico increased to 1,666,000 barrels, as the Maljamar field began producing in Lea County, southeastern portion of the state, and Table Mesa in the northwestern district.

No important discoveries occurred in 1927, and the New Mexico production dropped to 1,226,000 barrels.

New Fields Discovered

In 1928 the output of the state declined further to 1,166,170 barrels, despite the opening of several new fields in southeastern New Mexico, including Eunice, Jal, and Vacuum (Fisher-Lowrie), all in Lea County.

However, those discoveries of 1928, together with several in 1929, resulted in a resumption of the upward trend of production by New Mexico in 1929, in which year the output was 1,961,386. The 1929 oil

[*Continued on page 154*]

New Mexico Crude Oil Production, by Fields, by Years

Complete Production History of State, in Barrels of 42 U. S. Gallons.

(Sources.—Except as otherwise indicated in footnotes, figures are from *Mineral Resources*, 1930, and *Minerals Yearbook*, 1934 and later.)

YEAR	Artesia Eddy County	Aztec San Juan County	Bloomfield San Juan County	Carter-Mattix Lea County	Cooper Lea County	Eaves Lea County	Eunice Lea County	Getty (Twin Hills) Eddy County	Hardy Area Lea County	Hobbs Lea County	Hogback San Juan County	Hospah McKinley County	Jal Lea County
1924	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	86,000	.....	.....
1925	748,000	.....	[A]	.....	.....	.....	.....	.....	.....	.....	187,000	.....	.....
1926	1,016,000	.....	[A]	.....	.....	.....	.....	.....	.....	.....	221,000	.....	.....
1927	582,000	.....	[A]	.....	.....	.....	.....	.....	.....	.....	223,000	[A]	.....
1928	410,000	.....	[A]	.....	.....	.....	[B]9,826	.....	.....	.....	169,000	[A]	[B]211,644
1929	323,000	.....	.....	.....	.....	.....	[B]15,069	[B]54,082	.....	[B]102,237	120,000	[A]	[B]292,773
1930	261,000	.....	.....	.....	.....	.....	[B]191,378	[B]36,354	.....	6,525,000	159,000	.....	[B]500,652
1931	[B]194,881	.....	.....	.....	.....	.....	[B]361,153	[B]36,836	.....	12,788,000	176,000	.....	[B]404,383
1932	[B]174,922	.....	.....	.....	.....	.....	[B]175,322	.....	.....	10,237,000	133,000	.....	[B]349,777
1933	[B]202,821	[A]	.....	.....	.....	.....	[B]289,434	.....	.....	11,543,000	77,000	.....	[B]538,250
1934	[B]217,168	[A]	.....	.....	[B]303,981	.....	[B]967,581	.....	.....	12,628,000	76,000	.....	[B]1,017,686
1935	[B]220,451	[C][D]4,166	[D]	[B]2,416	[B]2,492,793	.....	[B]3,217,418	[B]4,456	.....	[B]11,061,549	[C]68,816	.....	[B]1,380,082
1936	[B]237,000	[D][E]1,664	[D]	[B]59,000	[B]2,836,000	[B]286,000	[B]7,667,000	[B]47,000	[B]70,000	[B]9,026,000	[E]84,657	.....	[B]687,000
1937 (4 mos.)	[B]77,000	.....	[D]	[B]105,000	[B]825,000	[B]126,000	[B]3,577,000	[B]27,000	[B]73,000	[B]2,645,000	24,500	.....	[B]145,000
Total	4,664,243	5,830	.....	166,416	6,457,774	412,000	16,471,181	205,728	143,000	76,555,786	1,804,973	.....	5,527,247

YEAR	Jeffers-Langlie Lea County	Lynch (Lea) Field Lea County	Maljamar Lea County	Monument Lea County	Penrose Lea County	Rattlesnake San Juan County	Rhoades Lea County	Skelly-Penrose Lea County	South Eunice Lea County	T. & P. State (Lynn) Lea County	Table Mesa San Juan County	Vacuum (Fisher-Lowrie) Lea County	Unclassified	Total New Mexico (By THE OIL WEEKLY)	Total New Mexico (By Government Sources)
1924	.....	.....	.....	.....	.....	[A]	.....	.....	.....	.....	.....	.....	12,000	98,000	98,000
1925	.....	.....	.....	.....	.....	[A]	.....	.....	.....	.....	.....	.....	125,000	1,060,000	1,060,000
1926	.....	.....	2,000	.....	.....	[A]	.....	.....	.....	.....	[A]	.....	427,000	1,666,000	1,666,000
1927	.....	.....	39,000	.....	.....	[A]	.....	.....	.....	.....	[A]	.....	382,000	1,226,000	1,226,000
1928	.....	.....	69,000	.....	.....	[A]	.....	.....	.....	.....	[A]	[B]1,700	295,000	1,166,170	943,000
1929	.....	[B]348,374	[B]194,280	.....	.....	[A]	.....	.....	.....	[B]17,794	[A]	[B]5,777	488,000	1,961,386	1,830,000
1930	.....	[B]1,815,083	[B]270,061	.....	.....	[A]	.....	.....	.....	[B]131,545	[A]	[B]300	462,000	10,352,373	10,189,000
1931	.....	[B]817,394	[B]202,950	.....	.....	[A]	.....	.....	.....	[B]30,486	[A]	.....	347,000	15,359,083	15,227,000
1932	.....	[B]788,691	[B]289,867	.....	.....	[A]	.....	.....	.....	[B]37,786	[A]	.....	260,000	12,446,365	12,455,000
1933	.....	[B]801,530	[B]402,491	.....	.....	[A]	.....	.....	.....	[B]29,424	[A]	.....	291,000	14,174,950	14,116,000
1934	.....	[B]633,435	[B]657,009	.....	.....	[A]	.....	.....	.....	[B]32,461	[A]	.....	300,000	16,833,321	16,864,000
1935	[B]7,061	[B]459,726	[B]642,097	[B]237,094	.....	[C]260,111	.....	[B]435	[B]81,409	[B]36,856	[C]34,413	.....	.....	20,211,349	20,574,000
1936	[B]186,000	[B]357,000	[B]822,000	[B]3,584,000	[B]210,000	[E]278,293	[B]25,000	[B]84,000	[B]206,000	[B]34,000	[E]28,995	.....	.....	26,816,609	.....
1937 (5 mos.)	[B]126,000	[B]116,000	[B]293,000	[B]3,109,000	[B]161,000	95,000	[B]8,000	[B]96,000	[B]99,000	[B]19,000	8,500	.....	.....	11,755,000	.....
Total	319,061	6,137,233	3,883,755	6,930,094	371,000	633,404	33,000	180,435	386,409	369,352	71,908	7,777	3,389,000	135,126,606	.....

GENERAL NOTE: A small showing of oil reported in Bernadillo County as early as 1889.

[A] Included with "unclassified."
[B] From oil company records.
[C] From state proration umpire's reports on pipe line runs.
[D] Aztec includes Bloomfield.
[E] From state proration office.

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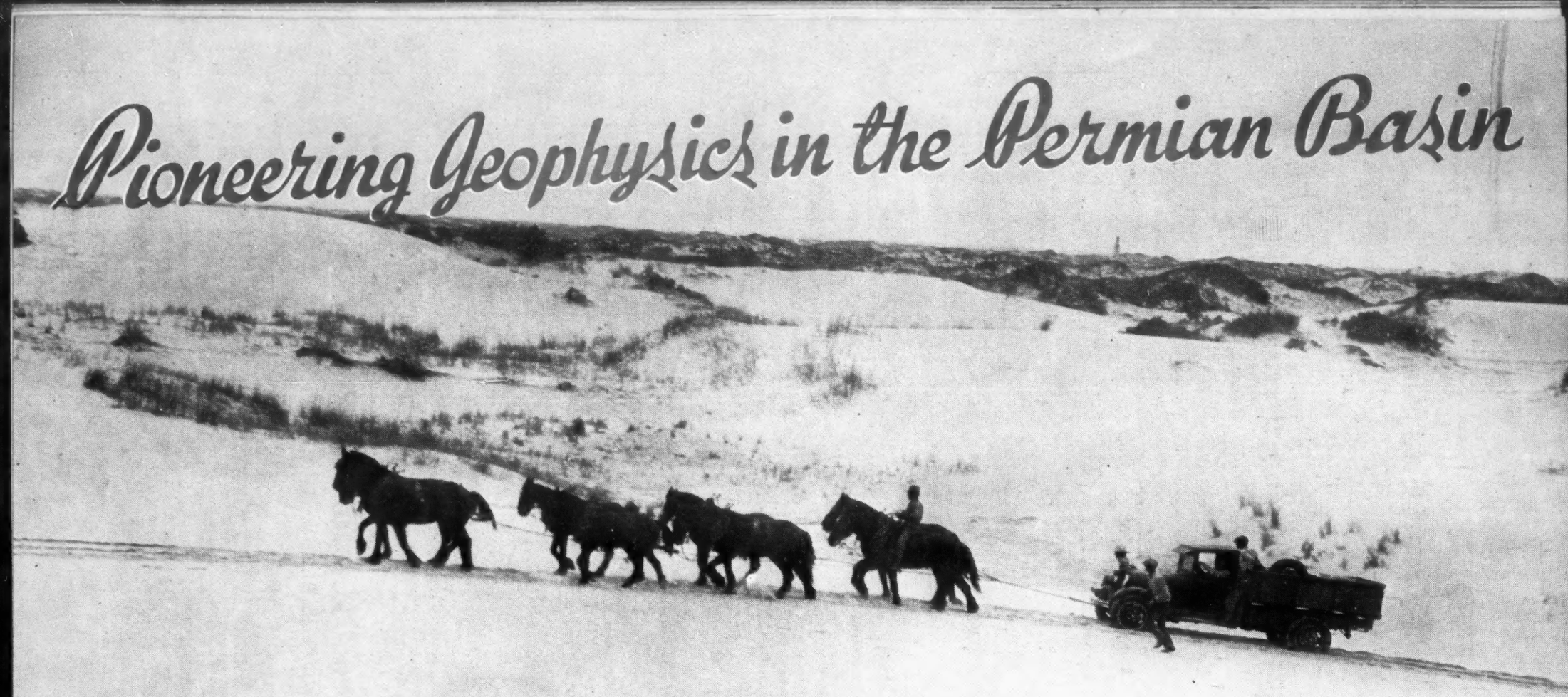
Pioneering Geophysics in the Permian Basin



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San Antonio, Texas

West Texas-New Mexico Oil and Gas Fields

Compiled by H. H. KING and F. B. TAYLOR
of THE OIL WEEKLY Staff

Acknowledgment is made of valuable assistance given by many operators, state department officials, and data from the annual yearbook of the National Oil Scouts Association and the Bureau of Mines Report of Investigations of Big Spring and other West Texas-New Mexico fields by C. B. Carpenter and H. B. Hill.

ANDREWS COUNTY

DEEP ROCK (Ogden)

Discovery Well: Tripplehorn Bros. (was Deep Rock Oil Co.-Atlantic & California Co.'s) C. E. Ogden 1, SW SW SE PSL Section 6, Block A-46, December 18, 1929. **Means of Discovery:** Geology: **Type Structure:** Anticline. **Producing Formation:** Permian limestone, 4300-4400 ft. **Producing Area:** 2000 acres. **Extent of Development:** Productive limits virtually defined, and irregular with nominal oil yield to be expected from inside locations remaining to be drilled. **Estimated Ultimate Recovery:** 3,000,000 bbls. **Production to 1937:** 789,575 bbls. **Indicated Remaining Reserve:** 2,210,425 bbls. **Daily Production July 1, 1937:** 383 bbls; 9 wells. **Potential:** 1461 bbls., July 1, 1937. **Gravity:** 26-32. **Oil Outlet:** Humble Pipe Line Co. **Rigs Running July 1, 1937:** 1. **Principal Leaseholders:** Geo. F. Getty, Inc., Humble Oil & Refining Co., Tripplehorn Bros. **Remarks:** Original owners of discovery disposed of their holdings due to delay in obtaining pipe line conection and poor showing made by their later tests.

EMMA

Discovery Well: Sinclair Prairie Oil Co.'s Emma Cowden 1, near CS½ SE SE 12, Blk 44, T&P Ry. Sur., March 4, 1937. **Means of Discovery:** Subsurface and geophysical. **Type Structure:** General anticlinal condition. **Producing Formation:** Permian lime between 4110 and 4301. **Producing Area:** Undefined, single well pool. **Extent of Development:** Possibly related to North Cowden, being on a general northwest productive trend from that pool. **Deepest Test:** Emma Cowden 1, pb from 4342 ft. **Gravity:** 29-30 degrees. **Rigs Running July 1, 1937:** 1. **Principal Leaseholders:** Sinclair Prairie Oil Co., Lew Wentz, Empire Oil & Refining Co., Standard Oil Co. of Texas, Amerada Petroleum Corp., Mid-Continent Petroleum Corp. **Remarks:** Discovery well not considered commercial, plugged June 16, 1937.

FUHRMAN

Discovery Well: Fuhrman Petroleum Corp.'s W. T. Ford 1, 440 ft. north and 2200 ft. east of SW 16, Blk A-43, PSL Sur., Nov. 21, 1930. **Means of Discovery:** Trend play. **Type Structure:** Anticline. **Producing Formation:** Permian lime from 4400 to 4500 ft. **Producing Area:** Not defined. **Deepest Test:** 4617 ft. **Estimated Ultimate Recovery:** No estimate. **Production to 1937:** 234-575 bbls. **Indicated Remaining Reserve:** Unestimated. **Daily Production July 1, 1937:** 798 bbls.; 14 wells. **Potential:** 7864 bbls., July 1. **Gravity:** 25 to 31 degrees. **Oil Outlet:** Humble Pipe Line Co. **Rigs Running July 1, 1937:** 3. **Principal Leaseholders:** Fuhrman Petroleum Corp., Standard Oil Company of Texas, Gulf Oil Corp., Barnsdall Oil Co., Skelly Oil Co., Phillips Petroleum Co., Magnolia Petroleum Co., Landreth Production Corp., Republic Production Corp. **Remarks:** Large volumes of gas encountered at about 4000 to 4100, gauged at 25, 31, and 35 million cubic ft., sweet, and bradenheaded off.

MEANS

Discovery Well: Humble Oil & Refining Co.'s R. M. Means 1, near C NE NE 2, PSL Sur., Blk. A-35, August 6, 1934. **Means of Discovery:** Subsurface Geology. **Type Structure:** Anticline. **Producing Formation:** Permian lime 4280-4350 ft. **Producing Area:** 4500 acres. **Extent of Development:** Not defined except to northeast and possibly to southeast. **Deepest Test:** Humble's R. M. Means 3, producer at 4628 ft. **Estimated Ultimate Recovery:** 45,000,000 bbls. **Production to 1937:** 689,000 bbls. **Indicated Remaining Reserve:** 44,311,000 bbls. **Daily Production July 1, 1937:** 1995 bbls.; 35 wells. **Potential:** July 1, 22,167 bbls. **Gravity:** 31-32 degrees. **Oil Outlet:** Humble Pipe Line Co. **Rigs Running July 1, 1937:** 2. **Principal Leaseholders:** Humble Oil & Refining Co., Sun Oil Co., Shell Petroleum Corp.

PARKER

Discovery Well: Honolulu Oil Corp.-Llano Oil Co.'s J. E. Parker 1-A, near C SW 7, Blk. A-44, PSL Sur., Dec. 9, 1934. **Means of Discovery:** Subsurface geology. **Type Structure:** Anticline. **Producing Formation:** Permian lime, 4700 to 4800 ft. **Producing Area:** Not defined. **Extent of Development:** Only two-well pool. **Production to 1937:** 25,731 bbls. **Daily Production July 1, 1937:** 38 bbls.; 2 wells. **Potential:** All marginal wells. **Gravity:** 32-33 degrees. **Oil Outlet:** Humble Pipe Line Co. **Rigs Running July 1, 1937:** None. **Principal Leaseholders:** Honolulu Oil Corp., Ltd., Llano Oil Co. **Remarks:** This is the deepest producing area in the county.

WALKER

Discovery Well: Humble Oil & Refining Co.'s B. S. Walker 1, C SE SE PSL Section 6, Block A-43, Dec. 8, 1934. **Means of Discovery:** Subsurface geology. **Type Structure:** Anticline. **Producing Formation:** Permian limestone 4340-90 ft., sulphur water at 4532-38 ft. plugged off. **Producing Area:** Single well field. **Extent of Development:** Undefined. **Production to 1937:** Included with Fuhrman field. **Daily Production July 1, 1937:** Well shut in. **Gravity:** 29-30 degrees. **Oil Outlet:** Humble Pipe Line Co. **Rigs Running July 1, 1937:** 1. **Principal Leaseholders:** Humble Oil & Refining Co., Gulf Oil Corp., Sun Oil Co. **Remarks:** Area related to Fuhrman field although given separate listing for proration purposes. Original well not pumped for any appreciable period, and now idle, with second test on lease under way.

COCHRAN COUNTY

DUGGAN

Discovery Well: Honolulu Oil Corp., Cascade Petroleum Co. and Devonian Oil Co.'s T. B. & R. F. Duggan 1, Center Labor 13, League 55, Oldham Co. Sch. Land Sur., Oct. 22, 1936. **Means of Discovery:** Random drilling. **Type Structure:** Anticline. **Producing Formation:** Permian lime 5018-5080 ft. **Producing Area:** 500 acres or more. **Extent of Development:** Single well pool. **Deepest Test:** Discovery carried to 5098 ft. and plugged back to pay. **Production to 1937:** Estimated 8500 bbls. **Daily Production July 1, 1937:** 50 bbls.; 1 well. **Potential:** July, 396 bbls. **Gravity:** 30-31 degrees. **Oil Outlet:** Tank trucks. **Rigs Running, July 1, 1937:** 1. **Principal Leaseholders:** Ingleright & Fogelson, Honolulu Oil Corp., Cascade Petroleum Co., Devonian Oil Co., Texas Pacific Coal & Oil Co., Skelly Oil Co., Saltmount Oil Co. **Remarks:** Discovery well is first commercial oil producer for the county, and is isolated from previous exploratory tests, situated mostly to northwest, where several abandoned wells showed oil possibilities. Duggan area is due to eventually develop into important crude reserve for north portion of Permian basin.

CONCHO COUNTY

UNNAMED

Discovery Well: Arkansas Fuel Oil Co.'s S. A. Hartgrove 1, 300 ft. from SWc NW, 49, H&TC Sur. A-476, Blk. 70, May 20, 1927, later recompleted. **Means of Discovery:** Surface geology. **Producing Formation:** Sandy lime from 1110 to 1140 ft. **Producing Area:** Single well pool. **Extent of Development:** Additional drilling failed to encounter production and only producer has since been abandoned. **Deepest Test:** Discovery carried to 3236 ft. **Principal Leaseholders:** Ed Strentz et al. **Remarks:** Discovery found first gas at 1110-1112 ft where the well showed for 500,000 cubic ft of wet, sweet gas. At 1136 ft. 2,500,000 cubic ft. were picked up, this volume increasing to 1150 ft. From 2494 to 2512 the well made about 8 bbls. crude. TD 3236 ft, later pb to 1150 for shallow gas pay. Indications found but no commercial production.

CRANE-UPTON COUNTY

CHURCH & FIELDS (*)

Discovery Well: Magnolia Petroleum Co.'s (was Church & Fields') University 1, NW SE SE Sec. 34, Blk. 30, April 19,1926. **Means of Discovery:** Trend. **Type Structure:** Anticline. **Producing Formation:** Permian limestone 2700 to 2900 ft.; separated into 2 pay members by impervious stratum. **Producing Area:** 3600 acres. **Extent of Development:** Productive area is defined. Production decline precludes possibility of later drilling of proved undrilled locations. **Deepest Test:** Discussed under Gulf-McElroy. **Estimated Ultimate Recovery:** 75,000,000 bbls. **Production to 1937:** 60,932,119 bbls. **Indicated Remaining Reserve:** 14,067,881 bbls. **Daily Production July 1, 1937:** 4249 bbls, 211 wells, exclusive of Gulf-McElroy. **Potential:** 25,205 bbls, July 1, 1937. **Gravity:** 30-32 degrees. **Oil Outlet:** Humble Pipe Line Co. and Gulf Refining Co. **Rigs Running July 1, 1937:** None. **Principal Leaseholders:** Atlantic Refin-Co., Gulf Oil Corp., Humble Oil & Refining Co., Magnolia Petroleum Co., Phillips Petroleum Co., Sinclair Prairie Oil Co., Storey, Friebele & Duffey, The Texas Company, Warner-Quinlan Co. of Texas, Weekley Oil Corp., Tide Water Associated Oil Co. **Re-**

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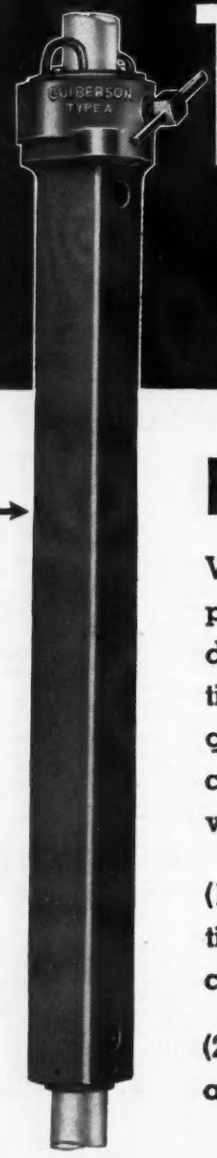

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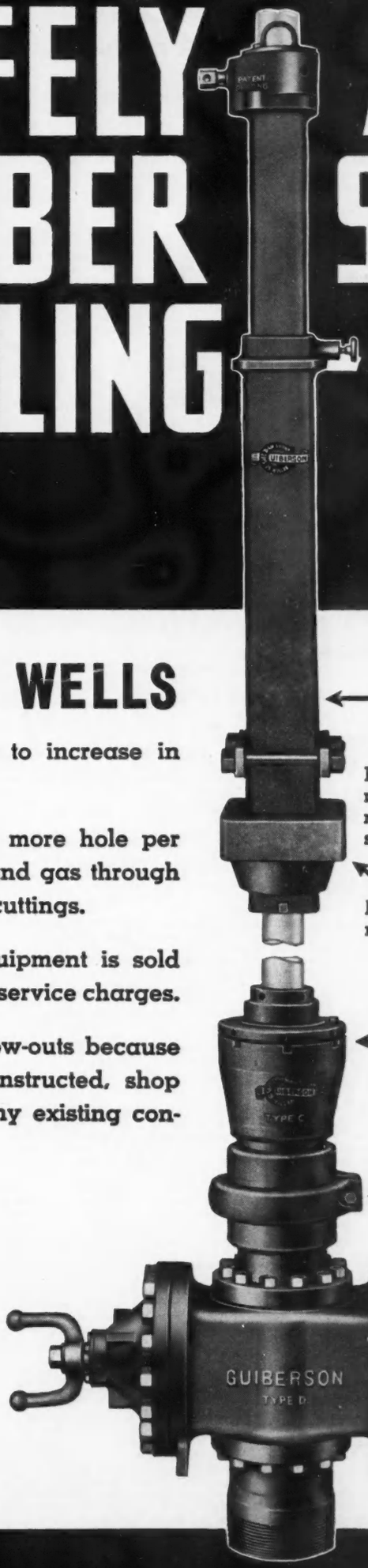

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marks: (*) South portion of the same structure, identified as the Gulf-McElroy and McClintic areas, discussed under Gulf-McElroy. High crude yield per acre recorded by Church & Fields sector made possible by prolific production and absence of proration restrictions until October, 1930. The Texas Co. (was Landreth Production Corp.'s) State Vacancy 11, completed Aug., 1927, rated at 8200 bbls. initial at 2840 ft., has produced about 6,250,000 bbls. of oil, and is currently rated at 4237 bbls potential, based on air lift flow, with an allowable of 80 bbls. daily.

GULF-McELROY (*)

Discovery Well: Gulf Oil Corp.'s J. T. McElroy 1, SEc Sec. 203, Blk. F, CCSD&RGNG Ry. Sur., July 21, 1926. **Means of Discovery:** Surface geology and trend. **Type Structure:** Anticline. **Producing Formation:** Permian limestone 2800-3000 ft. **Producing Area:** 9600 acres. **Extent of Development:** Production on the north linked with Church & Fields field, and considered defined on the McClintic portion of the south end, but is subject to extensions on the east and west flanks of the structure. **Deepest Test:** Gulf Oil Corp.'s J. T. McElroy 103, C NW SW Sec. 197, Blk. F, Upton County, drilled to Ellenberger member of Ordovician and produced water at 12,786 ft., May, 1935, establishing world depth record. Well pb to regular lime for production. **Estimated Ultimate Recovery:** 115,200,000 bbls. **Production to 1937:** 38,971,000 bbls. **Indicated Remaining Reserve:** 76,229,000 bbls. **Daily Production July 1, 1937:** 7541 bbls; 201 wells. **Potential:** 103,087 bbls., July 1, 1937. **Gravity:** 30-34 degrees. **Oil Outlet:** Gulf Refining Co., Humble Pipe Line Co. **Rigs Running July 1, 1937:** 4. **Principal Leaseholders:** Gulf Oil Corp., Amtex Petroleum Corp., and Storey, Friebele & Duffey. **Remarks:** (*) Includes all of Gulf Oil Corp.'s holdings on J. T. McElroy and Crier-McElroy leases, and McClintic area on south end of same structure. Church & Fields field, embracing north end of same structure, is treated under a separate heading. For proration purposes the north row of sections of J. T. McElroy leasehold are included in Church & Fields area, and have been drilled to an equal density to the latter, but remainder of Gulf-McElroy area has experienced a wider spacing.

CRANE COUNTY

JORDAN

Discovery Well: H. M. Clark, Cooper and Smith's A. P. Jordan 1, near CNE NE 12, Blk. B-22, PLS Sur., Feb. 21, 1937. **Means of Discovery:** Trend location. **Type Structure:** Anticline. **Producing Formation:** Permian lime from 3590 to 3750 ft. **Producing Area:** Two widely separated producers. **Extent of Development:** Not outlined. **Daily Production July 1, 1937:** 82 bbls.; 1 well. **Potential:** 380 bbls., July 1, 1937. **Gravity:** 33-35 degrees. **Oil Outlet:** Gulf Refining Co. **Rigs Running July 1, 1937:** 3. **Principal Leaseholders:** H. M. Clark, Cooper & Smith, Sinclair Prairie Oil Co., The Texas Co., Snowden & McSweeney Co., Standard Oil Co. of Texas. **Remarks:** This production may be a 3½-mile south extension to Pennwell (Judkins) area. Discovery well currently listed as inactive.

McKNIGHT (Sand Hills)

Discovery Well: Gulf Oil Corp.'s M. B. McKnight 1, C SW SW 9, Blk. B-21, PSL Sur., June 31, 1935. **Means of Discovery:** Subsurface indications. **Type Structure:** Superimposed minor high on larger anticline. **Producing Formation:** Permian sandy-lime between 3240 and 3535 ft. **Producing Area:** Undefined. **Extent of Development:** Single well producing from this pay, one well drilling to Ordovician lime level. **Production to 1937:** Included with Sand Hills field. **Daily Production July 1, 1937:** 8 bbls.; 1 well. **Potential:** Marginal well. **Gravity:** 29-30 degrees. **Oil Outlet:** Shell Pipe Line Corp. **Figs Running July 1, 1937:** 1. **Principal Leaseholder:** Gulf Oil Corp. **Remarks:** Area is considered related to the Sand Hills structure.

SAND HILLS

Discovery Well: Gulf Oil Corp.-T. B. Cranfill's J. B. Tubb 1, SE SE NE, Sec. 8, Blk. B-27, PSL, June 11, 1931. **Means of Discovery:** Surface, core drill. **Type Structure:** Anticlinal dome. **Producing Formation:** Permian lime 4250-4450 ft. **Producing Area:** 2000 acres. **Extent of Development:** Partially defined to north and northwest. **Deepest Test:** (See Ordovician listings). **Estimated Ultimate Recovery:** 20,000,000 bbls., exclusive of Ordovician. **Production to 1937:** 152,550 bbls., including Ordovician wells. **Indicated Remaining Reserve:** 19,847,450 bbls. **Daily Production July 1, 1937:** 1112 bbls.; 22 wells. **Potential:** 51,740 bbls, July 1, 1937. **Gravity:** 38-39 degrees. **Oil Outlet:** Shell Pipe Line Corp. **Rigs Running July 1, 1937:** 7. **Principal Leaseholders:** Gulf Oil Corp.-Truett B. Cranfill, Humble Oil & Refining Co., American Liberty Oil Co. et al, Sinclair Prairie Oil Co. et al, Loffland Bros. Co. **Remarks:** Sand Hills structure is one of the largest in West Texas. Development of the Permian level, which produces from the lower lime section and below the first sulphur water zone, was held in abeyance until lease expirations forced drilling to the west and southwest in 1936.

SAND HILLS (Deep)

Discovery Well: Gulf Oil Corp.'s W. N. Waddell et al 1, C NW NW PSL Sec. 4, Blk. B-27, Feb. 5, 1936. **Means of Discovery:** Geology and geophysical investigation of prominent structural high. **Type Structure:** Anticlinal dome. **Producing Formation:** Ordovician sand and limestone series, varying from 5980 to 6317 ft. **Producing Area:** Undetermined. **Extent of Development:** 3 deep projects resulted in 2 marginal producers and a prolific natural oil and gas well. **Deepest Test:** Second deep project plugged back from flowing sulphur water in Ellenberger at 6709 ft. to 6186 ft. for marginal producer. **Production to 1937:** Included with Sand Hills field. **Daily Production July 1, 1937:** 260 bbls.; 3 wells. **Potential:** 1945 bbls., July 1, 1937. **Gravity:** 34 to 44 degrees. **Oil Outlet:** Shell Pipe Line Corp. **Rigs Running July 1, 1937:** 3. **Principal Leaseholders:** Gulf Oil Corp., Sinclair Prairie Oil Co. et al, Cranfill Bros. and Penn Oil Co. **Remarks:** Natural potential flow of 1885 bbls. 44° gravity oil developed by Waddell et al 4 from Ellenberger limestone at 6004-6014 ft. is the first important Ordovician strike for the district outside the Big Lake field. The 2 previous tests are on the northwest nose of the structure.

TAYLOR-HUGHES (See McCamey)

Discovery Well: Shell Petroleum Corp. (was Independent Oil & Gas Co.-Turman & Maxwell's) Len Taylor Sapp 1, near CSW NW SE 6, H. T. Sapp Sur., Feb. 24, 1926. **Means of Discovery.** Trend from McCamey. **Type Structure:** Anticline. **Producing Formation:** Permian limestone, varying from 2000 to 2500 ft. **Extent of Development:** Through normal expansion of this production and of McCamey, the 2 areas have been proven to be one field, treated under McCamey. **Production to 1937:** Included with McCamey. **Gravity:** 24-30 degrees. **Oil Outlets:** Shell Pipe Line Corp., and Humble Pipe Line Co. **Rigs Running July 1, 1937:** 10.

WADDELL

Discovery Well: Gulf Oil Corp.'s W. N. Waddell 2, NE NE NE PSL Sec. 10, Blk. B-25, PSL Sur., Aug. 29, 1927. **Means of Discovery:** Core drill based on surface geology. **Type Structure:** Anticline. **Producing Formation:** Permian lime, 3300 to 3600 ft., with best porosity only short interval above water table. **Producing Area:** 2000 acres, excluding nonprofitable acreage. **Extent of Development:** Productive limits defined, except to west of the north portion of the structure. **Estimated Ultimate Recovery:** 20,000,000 bbls. **Production to 1937:** 886,500 bbls. **Indicated Remaining Reserve:** 19,113,500 bbls. **Daily Production July 1, 1937:** 2109 bbls.; 31 wells. **Potential:** 214.856 bbls., July 1, 1937. **Gravity:** 33-35 degrees. **Oil Outlet:** Gulf Refining Co. **Rigs Running July 1, 1937:** 3. **Principal Leaseholders:** Gulf Oil Corp., Magnolia Petroleum Co., Tide Water Associated Oil Co., Steve Currie et al and S. Caprito et al. **Remarks:** Original exploratory work occurred over wide area about 3 miles southeast of what now constitutes the prolific portion of the field and because of small oil yield per well production was suspended until 1935. Discovery company and Magnolia Petroleum Co. control the prolific leases.

CROCKETT COUNTY

HOOVER

Discovery Well: R. C. Chambers et al's A. C. Hoover 1. CNE SE NE 1, Blk. "FF", B&B Sur., Jan., 1933. **Means of Discovery:** Random drilling. **Producing Formation:** Broken lime, 1930 to 2105 ft., with show at 2100, TD. **Extent of Development:** Subsequent drilling failed to improve the outlook for commercial production from area. **Production Through 1936:** Not profitable to operate. **Remarks:** Initial production of Hoover 1 estimated at five barrels per day.

SHANNON (Gas)

Discovery Well: W. W. Donnelly et al's J. M. Shannon 1, C Sec. 11, Blk. 9, D&SE Ry. Sur., Oct. 16, 1927. **Means of Discovery:** Random drilling **Producing Formation:** Sectional from 1664 to 1680 ft. **Producing Area:** Undefined. **Extent of Development:** Not developed. **Remarks:** Initial production was gauged at 6,000,000 cubic ft., with rock pressure of 800 lbs. gauge. Some oil spray was noticed. No market for production, well abandoned.

TODD

Discovery Well: Continental Oil Co.'s J. S. Todd 1-A, CNE SE 26, Blk. "W-X", GCSF Ry. Sur., Jan. 17, 1933. **Means of Discovery:** Surface geology. **Type Structure:** Anticline. **Producing Formation:** Lime, 1539-1542 ft. **Extent of Development:** Small individual production retarded development. **Deepest Test:** Approximately 2½ miles SE of Todd 1-A, Stanolind Oil & Gas Co., on unitized acreage, drilled deep test to Ellenberger. Location was near CNE 67, Blk. "UV," GCSF Ry. Sur., well abandoned at 8041 ft although good shows encountered in upper Ordovician. **Production to 1937:** 17,751 bbls., and wells abandoned. **Gravity:** 21-22 degrees. **Rigs Running July 1, 1937:** 1. **Remarks:** Shallow oil production depleted, wells plugged. Second Ordovician test underway on unitized acreage.

TODD (Gas)

Discovery Well: The Texas Co. (was J. C. Cooke et al's) J. S. Todd 1. near CNE SW 50, Blk. "W-X", GCSF Ry. Sur., April 24, 1926. **Means of Discovery:** Geology. **Type Structure:** Unidentified. **Producing Formation:** Lime, 1680 to 1700 ft. **Producing Area:** Undefined. **Extent of Development:** No outlet and so not dedeveloped. **Deepest Test:** See Todd pool; oil. **Remarks:** Gas area is inactive. Open flows of 10,000,000 cubic ft. were gauged. Well later plugged by owner and leases surrendered.

WORLD (Powell)

Discovery Well: Humble Oil & Refining Co.-Continental Oil Co. (was World Oil Co.'s) L. P. Powell 1. NE¼, Blk. BB2, June 8, 1925. **Means of Discovery:** Random drilling. **Type Structure:** Anticlinal dome. **Producing Formation:** Permian lime 2600 to 2700 ft. **Producing Area:** 1800 acres. **Extent of Development.** Productive area is apparently defined. Inside locations to be drilled. **Estimated Ultimate Recovery:** 7,500,000 bbls. **Production Through 1936:** 4,519,000 bbls. **Indicated Remaining Reserve:** 2,981,000 bbls. **Daily Production July 1, 1937:** 1187 bbls., 37 wells. **Potential:** 5247 bbls, July 1. **Gravity:** 28-30 degrees. **Oil Outlet:** Humble Pipe Line Co. **Rigs Running July 1, 1937:** 1. **Principal Leaseholders:** Standard Oil Co. of Texas, Eppenauer, Humble Oil & Refining Co., Republic Production Co., E. L. Smith Oil Co., Stanolind Oil & Gas Co., Amerada Petroleum Corp., Superior Oil Co., Trans-Texas Oil Co.

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DAWSON COUNTY

ALBAUGH

Discovery Well: Ray A. Albaugh et al's John Robinson 1, C NW of EL&RR Co. Section 46, Blk. M, Nov. 27, 1936. **Means of Discovery:** Random drilling. **Type Structure:** Anticline. **Producing Formation:** Permian limestone at 4944-5038 ft, sulphur water in lower section. **Producing Area:** Single well pool. **Extent of Development:** E. L. Wilson et al's Texas Land & Mortgage Co. 1, about 1½ miles south by east of discovery, was failure at 5050 ft., although about level structurally with the discovery pumper. **Production to 1937:** "Several tanks" of oil produced. **Gravity:** 32-33 degrees. **Rigs Running July 1, 1937:** None. **Principal Leaseholders:** Ray A. Albaugh et al, E. L. Wilson et al, Lion Oil Ref. Co., Magnolia Petroleum Co., Atlantic Ref. Co., Snowden & McSweeney Co., and Stanolind O. & G. Co. **Remarks:** Discovery well not pumped over sufficient period to determine if it can qualify as commercial producer.

ECTOR COUNTY

COWDEN (North)

Discovery Well: Stanolind O. & G. Co. (was Southern Crude Oil Purchasing Co.'s) J. M. Cowden 1, SW SW NW TP Ry. Sec. 26, Blk 43, T-1-N, Sept. 10, 1930. **Means of Discovery:** Subsurface geology. **Type Structure:** Anticline. **Producing Formation:** Permian lime and sand 4100-4250 ft. **Producing Area:** 6500 acres. **Extent of Development:** Productive area outlined, except for possible extensions to northeast and northwest. **Deepest Test:** Landreth's Holt 1, near C SW SE TP Ry. Sec. 15, Blk. 43, T-1-N, north end main field, drilled to 4627 ft. and pb for producer, and Sun Oil Co.'s Holt 1, SWc TP Ry. Sec. 5, Blk. 43, T-1-N, north extension area, drilled to 4971 ft. and pb for producer. **Estimated Ultimate Recovery:** 58,500,000 bbls. **Production to 1937:** 3,966,000 bbls. **Indicated Remaining Reserve:** 54,534,000 bbls. **Daily Production July 1, 1937:** 8094 bbls., 142 wells. **Potential:** July 1, 86,280 bbls. **Gravity:** 32-35 degrees. **Oil Outlet:** Humble Pipe Line Co. **Rigs Running July 1, 1937:** 13. **Principal Leaseholders:** Alma Oil Co., Amerada Pet. Corp., Atlantic Ref. Co., Barnsdall Oil Co., Devonian Oil Co., Empire Oil & Ref. Co., A. R. Eppenauer, R. G. Jenings, Landreth Production Corp., Landreth-Llano, Mid-Continent Pet. Corp., W. B. Powell and Owenwood pool No. 3, Phillips Pet. Co., Sinclair Prairie Oil Co., Stanolind O. & G. Co., Sun Oil Co., The Texas Co., Tide Water Associated Oil Co., Fred Turner, Jr., Continental Oil Co.

COWDEN (South)

Discovery Well: L. C. Harrison et al's F. V. Addis 1, C N½ N½ NW 35, Blk 43, T&P Ry Sur., T-2-S, Jan. 30, 1933. **Means of Discovery:** Subsurface geology. **Type Structure:** Anticline. **Producing Formation:** Sandy lime, 3846 to 4061 ft. **Producing Area:** 1200 acres. **Extent of Development:** Field defined. **Production to 1937:** 752,900 bbls., including Foster. **Daily Production July 1, 1937:** 328 bbls., 13 wells. **Potential:** 1251 bbls., July 1. **Gravity:** 34 degrees. **Oil Outlet:** Humble Pipe Line Co. **Principal Leaseholders:** Atlantic Refining Co., Bond Oil Corp., Bohago Oil Corp., Humble Oil & Ref. Co., SKelly Oil Co., Stanolind O. & G. Co., Fred Turner, Jr., R. A. Westbrook. **Remarks:** Area occasionally referred to as Addis or Odessa sector.

CUMMINS

Discovery Well: Cascade Petroleum Co. (was C. J. Davidson) & Atlantic Ref. Co.'s H. E. Cummins 1, near C NW NW 10, T&P Ry. Sur., Blk. 45, T-1-N, July 10, 1934. **Means of Discovery:** Random drilling. **Type Structure:** Unknown. **Producing Formation:** Laminated Permian lime, 4250 to 4510 ft. **Extent of Development:** Major development is southeast of discovery. **Production to 1937:** Discovery well has remained shut in through lack of pipe line outlet. **Gravity:** 31 degrees. **Principal Leaseholders:** Fred Shields, Cascade Petroleum Co., Atlantic Ref. Co., Empire Oil & Ref. Co., General Crude Oil Co., and Amerada Pet. Corp. **Remarks:** It is considered probable that Cummins and Goldsmith production areas are parts of the same pool.

FOSTER

Discovery Well: Barnsdall Oil Co.'s H. C. Foster 1, C SE SE 13, Blk. 43, T-2-S, T&P Ry. Sur., Dec. 21, 1935. **Means of Discovery:** Trend drilling. **Type Structure:** Closed anticline. **Producing Formation:** Permian lime between 4090 and 4330 ft. **Producing Area:** 3300 acres. **Extent of Development:** This pool is quite undeveloped from present indications, with possible northern limit 1½ miles from production. Northwest limit indicated by small producer. **Deepest Test:** None through Permian lime. **Estimated Ultimate Recovery:** 4,220,000 bbls. **Production Through 1936:** 752,900 bbls., including Cowden South. **Daily Production July 1, 1937:** 1824 bbls., 33 wells. **Potential:** July 1, 16,016 bbls. **Gravity:** 35-37 degrees. **Oil Outlet:** Humble Pipe Line Co. **Rigs Running July 1, 1937:** 12. **Principal Leaseholders:** Atlantic Ref. Co., Arkansas Fuel Oil Co., Barnsdall Oil Co., Broderick & Calvert, Continental Oil Co., Indian Territory Illuminating Oil Co., Landreth Production Corp., Phillips Petroleum Co., Sinclair Prairie Oil Co., Stanolind Oil & Gas Co., York & Harper.

GOLDSMITH

Discovery Well: Gulf Oil Corp.'s C. A. Goldsmith 1, C NW¼ T&P Ry. Sec. 10, Blk. 44, T-1-S, June 14, 1935. **Means of Discovery:** Geology. **Type Structure:** Anticline. **Producing Forma-**

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Cash and Due from Banks	$22,643,092.58	
U. S. Government Securities	14,631,970.33*	
Other Bonds and Warrants	6,517,528.69*	$43,792,591.60
Loans and Discounts		14,745,688.73
Overdrafts		3,888.26
Income Receivable Accrued		162,787.75
Stock in Federal Reserve Bank		180,000.00
Investment in Bank Premises		2,401,479.77
Customers' Liability under Acceptances		5,846.50
TOTAL		$61,292,282.61

LIABILITIES

Deposits		$54,953,049.04
Acceptances Executed		5,846.50
Income Collected not Earned		64,693.14
Interest, Taxes, etc., Accrued		61,190.08
Reserve for Preferred Dividend		24,375.00
Capital — Preferred	$1,625,000.00	
Capital — Common	2,250,000.00	
Surplus	2,125,000.00	
Undivided Profits and Reserves	183,128.85	6,183,128.85
TOTAL		$61,292,282.61

* Of the total of $21,149,499.02 U. S. Government Securities and Other Bonds and Warrants $14,217,795.39 mature within five years.

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tion: Permian limestone, varying from 4100 to 4250 ft. **Producing Area:** 12,000 acres. **Extent of Development:** Exploratory work has progressed sufficiently to provide a general outline of the productive limits, based upon failures and structurally low producers. **Estimated Ultimate Recovery:** 96,000,000 bbls. **Production to 1937:** 486,000 bbls. **Indicated Remaining Reserve:** 95,514,000 bbls. **Daily Production July 1, 1937:** 7467 bbls.; 138 wells. **Potential:** 165,903 bbls., July 1, 1937. **Gravity:** 35-37 degrees. **Oil Outlet:** Gulf Refining Company, Shell Pipe Line Corp. **Rigs Running July 1, 1937:** 69. **Principal Leaseholders:** Amerada Pet. Corp., American Maracaibo Co., Atlantic Ref. Co., Bond Oil Corp.-L. C. Harrison, Devonian Oil Co., Cordova Union Oil Corp., W. H. Dunning Jr. Estate, Empire Oil & Ref. Co., Grisham-Hunter Oil Corp. & Crump, Gulf Oil Corp., Humble Oil & Ref. Co., Landreth Production Corp., John Mabee & Blackstock, Manson Oil Co., Ben F. Neysenwander et al, Phillips Petroleum Co.-Pure Oil Co., Shasta Oil Co. et al, Shell Pet. Corp., Texas Pacific Coal & Oil Co., and Rogers & Rogers. **Remarks:** First production on Goldsmith structure recorded Nov., 1934, when Landreth Production Corp.'s Scharbauer 1, located 3¾ miles northwest of above credited oil discovery, completed as big gasser with distillate spray. Owners of large lease tracts will probably adopt a wide spacing policy.

GOLDSMITH (Gas)

Discovery Well: Landreth Production Corp. et al's Clarence Scharbauer 1, C SE SE 20, Blk. 44, T&P Ry. Sur., T-1-N, completed 11-18-34. **Means of Discovery:** Substructure geology. **Type Structure:** Anticline. **Producing Formation:** Permian lime, 4100 to 4186 ft. **Deepest Test:** Discovery pb from sulphur water at 4238 ft. to 4186 ft. **Production Through 1936:** (See Goldsmith oil discovery listing). **Gravity:** 50-52 degrees (distillate). **Oil Outlet:** Gulf Ref. Co. **Rigs Running July 1, 1937:** 1. **Remarks:** Discovery well produces 30 to 40 barrels of distillate daily in supplying boiler fuel for about 20 drilling rigs. Normal completion would have made oil producer, but pipe set near top of oil pay, making impossible to shoot with nitro, and 2000-gallon acid treatment caused upper gas to break through casing seat.

HARPER

Discovery Well: Broderick & Calvert's E. F. Cowden 1, 330 N of C SL 25, Blk. 44, T-2-S, T&P Ry. Sur., Oct. 11, 1933. **Means of Discovery:** Subsurface geology. **Type Structure:** SE-NW trending anticline. **Producing Formation:** Permian lime between 4147 and 4338 ft., with main productive strata between 4140 and 4185 ft. **Producing Area:** 640 acres, with prospects of major extensions. **Extent of Development:** Field being normally developed on proved locations with three outpost tests under way at NW, SE and SW edges of production. **Estimated Ultimate Recovery:** 4,800,000 bbls. **Production to 1937:** 96,185 bbls. **Indicated Remaining Reserve:** 4,703,815 bbls. **Daily Production July 1, 1937:** 544 bbls., 5 wells. **Potential:** 6389 bbls., July 1. **Gravity:** 35-37 degrees. **Oil Outlet:** Humble Pipe Line Co. **Rigs Running July 1, 1937:** 5. **Principal Leaseholders:** Broderick & Calvert, Shell Pet. Corp., Honolulu Oil Corp., Am-Tex Pet. Corp. **Remarks:** Proving of high gravity production in this pool was one of the first indications that oil lighter than 31 degrees API was of occurrence in the entire western sector of county.

JOHNSON

Discovery Well: Landreth Prod. Corp.,'s J. L. Johnson 1, NWc T&P Ry. Sec. 47, Blk. 43, T-1-S, Dec. 28, 1934. **Means of Discovery:** Subsurface geology. **Type Structure:** Anticline, with nominal structural relief due to thinning of interval between Yates sand zone and the big lime. **Producing Formation:** Permian limestone 4087-4166 ft. **Producing Area:** Not established, but likely to connect with Foster field to southeast. **Extent of Development:** 2 producers in immediate area. **Deepest Test:** Sinclair Prairie Oil Co.'s J. L. Johnson 1-A, NEc NW¼ T&P Ry. Sec. 42, Blk 42, T-1-S, about 3 miles northeast of discovery, abandoned at 6098 ft. Discovery well pb from water at 4180 ft. **Production to 1937:** 23,029 bbls. **Daily Production July 1, 1937:** 43 bbls; 2 wells. **Potential:** 43 bbls., July 1, 1937. **Gravity:** 34-36. **Oil Outlet:** Humble Pipe Line Co. **Rigs Running July 1, 1937:** None.. **Principal Leaseholders:** Landreth Production Corp., Sinclair Prairie Oil Co., The Texas Co., Atlantic Refining Co., and Ohio Oil Co.

PENWELL (Judkins)

Discovery Well: The Texas Co. (was J. S. Cosden, Inc.'s) W. E. Connell 1, C NE 13, PSL Sur., Blk. B-16, Dec. 28, 1926. **Means of Discovery:** Geology. **Type Structure:** Closed anticline. **Producing Formation:** Permian lime at 3475 and from 3660 to 3800 ft. **Producing Area:** 7000 acres. **Extent of Development:** A number of inside locations remaining undrilled. The south trend of production for this area is considered favorable for extension. The north trend is defined and the pre-well production along the west flank is unfavorable to development. Acreage along the east side is held in large blocks and companies have deferred expansion in this direction. **Estimated Ultimate Recovery:** 31,500,000 bbls. **Production to 1937:** 15,170,000 bbls. **Indicated Remaining Reserve:** 16,330,000 bbls. **Daily Production July 1, 1937:** 5570 bbls, 145 wells. **Potential:** 45,510 bbls., July 1. **Gravity:** 30-36 degrees. **Oil Outlet:** Humble Pipe Line Co., Gulf Refining Co. **Rigs Running July 1, 1937:** 4. **Principal Leaseholders:** Amerada Pet. Corp., W. A. Black & Sons, Callihan & O'Donnell, Cosden Oil Corp., G. E. Farley, Gulf Oil Corp., Humble Oil and Ref. Co., Landreth Production Corp., Ohio Oil Co., C. L. Peters, Shell Pet. Corp., Sinclair Prairie Oil Co., Skelly Oil Co., Republic Production Co., Sunray Oil Co., The Texas Co., Tidewater Associated Oil Co. **Remarks:** Salt is topped at near 900 ft., the strata being only about 30 ft. in thickness. First oil is found at about 3300 ft. Discovery well of field was first producer in county. This well and later tests in the immediate area did not yield attractive production, and field did not command an aggressive drilling program until Oct. 1929, when Penn Oil Co. and Humble's T. P. Land Trust 1 developed prolific production more than two miles northeast of original group of tests.

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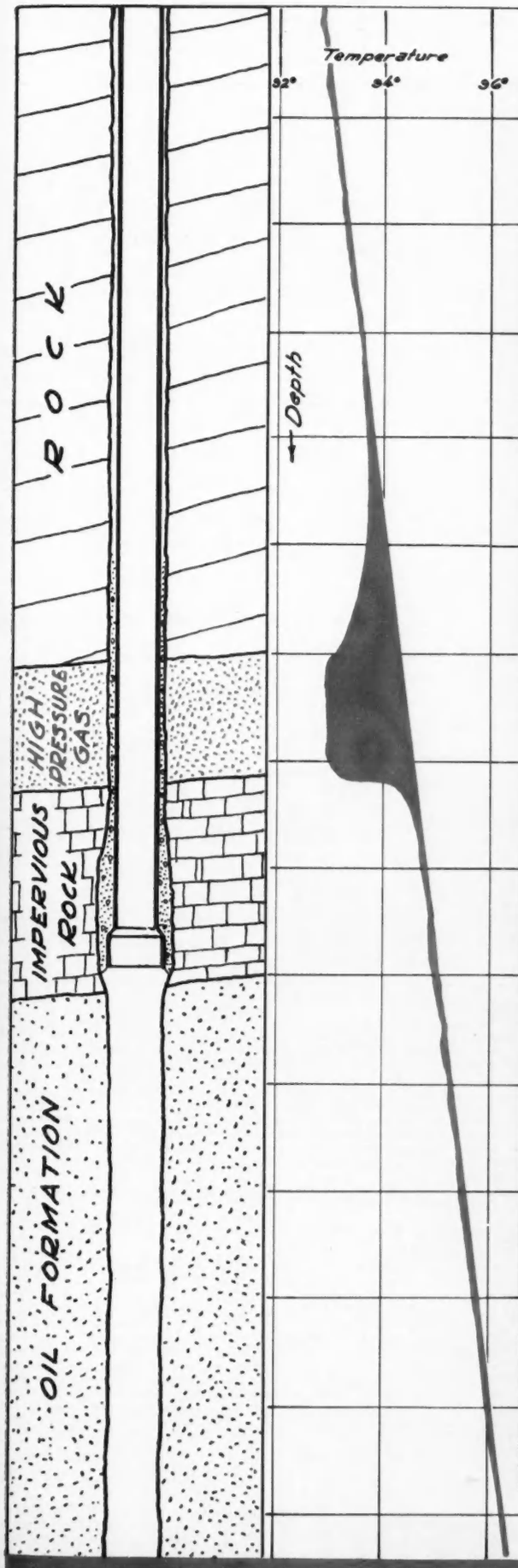

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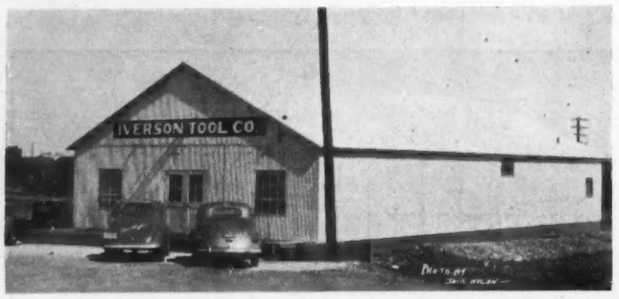

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FISHER COUNTY

ROBINSON

Discovery Well: Southern Oil Corporation of America's Joe Robinson 1, CE½ NW 172, Blk. 2, H&TC Ry. Sur., May 15, 1937. **Means of Discovery:** Geology. **Type Structure.** Anticline. **Producing Formation:** Porous dolomite at about 3500 ft; 30 ft thick. **Extent of Development:** Single producer. **Deepest Test:** Discovery. **Gravity:** 41.7 degrees. **Oil Outlet:** Tank trucks. **Rigs Running July 1, 1937:** 1. **Principal Leaseholders:** Magnolia Pet Co., Tide Water Associated Oil Co., Southern Oil Corp. of America, General Crude Oil Co., Snowden & McSweeney Co., and Danciger. **Remarks:** Discovery has not been given official potential gauge due to delay in landing oil string. Well producing 20 barrels oil hourly through crack in gate valve, indicating high initial output.

ROTAN

Discovery Well: Tide Water Associated Oil Co., and Merry Bros. & Perini Inc.'s M. Howard 1, C E½ NE sec. 180, Blk, 2, H&TC Ry. Sur., March 5, 1935. **Means of Discovery:** Surface indications. **Type Structure:** Anticline. **Producing Formation:** Pennsylvania lime 3600 to 3675 ft. **Producing Area:** 150 acres. **Extent of Development:** Three small producers and 1 failure on discovery block. Sulphur water encountered at 3677 ft from elevation of 1849 ft. **Deepest Test:** Discoverer's W. E. Hittson 1, about ¼ mi E. of M. Howard 1, abandoned at 3705-07 ft; salt water. **Estimated Ultimate Recovery:** 600,000 bbls. **Produced to 1937:** 107,011 bbls. **Indicated Remaining Reserve:** 492,989 bbls. **Daily Production July 1, 1937:** 137 bbls, 3 wells. **Potential:** July 1, 969 bbls. **Gravity:** 37-38. **Oil Outlet:** Tide Water Associated Oil Co.'s 4 mi 4-inch line to Shell Pipe Line Corp. trunk line. **Principal Leaseholders:** Tide Water Associated Oil Co., Merry Bros. & Perini, Inc.

ROYSTON

Discovery Well: The Texas Company's Dan W. Stephens 1-A, SEc 79, Blk 1, H&TC Ry. Sur., Jan. 17, 1928. **Means of Discovery:** Surface geology. **Type Structure:** Southwest plunging nose with closure. **Producing Formation:** Saddle creek lime, 3000 to 3100 ft. **Producing Area:** 3500 acres. **Extent of Development:** Productive limits considered outlined, with an appreciable number of proved inside locations to be drilled. **Deepest Test:** General Crude Oil Co. (was Cranfill-Reynolds Co.'s) William Flannagan Bledsoe 1, NE SW SW sec. 200, B.B.B. & C. Ry. Sur., deep test, found production between 3782 and 3800 ft. Although it made 65 bbls oil with 5 water, the well was later recompleted in higher pay. **Production to 1937:** 7,829,545 bbls. **Daily Production July 1, 1937:** 3183 bbls, 111 wells. **Potential:** 24,856 bbls, July 1. **Gravity:** 38-39. **Oil Outlets:** Humble Pipe Line Co., Shell Pipe Line Corp. **Rigs Running July 1, 1937:** 4. **Principal Leaseholders:** Dean Bros., General Crude Oil Co., Mid-Continent Pet. Corp., Roeser & Pendleton Inc., Sinclair Prairie Oil Co., Southern Oil Corp., Stanolind O & G Co., The Texas Co., **Remarks:** A sharp decline in crude yield has been noticed in this field during the past six months, with a proportional increase in water volumes. This may have a tendency to discourage development of inside locations.

GAINES COUNTY

KIRK

Discovery Well: Landreth Production Corp.'s W. H. Kirk 1, SW SW SW PSL Sec 22, Blk A-21, Sept. 29, 1936. **Means of Discovery:** Subsurface geology. **Type Structure:** Anticline. **Producing Formation:** Permian limestone 4796 to 4850 ft, plugged off sulphur water at 4870 ft. **Producing Area:** Single well area. **Extent of Development:** Dry holes and small yield of discovery well trend to discourage additional exploratory work. **Production to 1937:** 1500 bbls. **Daily Production July 1, 1937:** None. **Gravity:** 26-28. **Rigs Running July 1, 1937:** 1. **Principal Leaseholders:** Landreth Production Corp., Humble Oil & Ref. Co., Stanolind O & G Co., Gulf Oil Corp., Amerada Petroleum Corp., Magnolia Petroleum Co., and L. H. Wentz et al. **Remarks:** Kirk 1 is isolated from market outlet and is not being produced.

SEMINOLE

Discovery Well: Amerada Petroleum Corp., et al's S. J. Averitt-Ohio 1-A, C NE NE 228, Blk G, W. T. Ry Sur, Jan 8, 1937. The first gas well, W. T. Walsh and Harry Adams Corp.'s S. J. Averitt 1, completed 3-15-36 but later abandoned, was a twin location and indicated productive possibilities of area. **Means of Discovery:** Geophysical location. **Type Structure:** Anticlinal dome. **Producing Formation:** Permian lime, 5010 to 5032 ft. **Extent of Development:** One offset producer has been completed. **Deepest Test:** Discovery went to 5054 ft, topping water at 5049 ft. **Production to 1937:** 1361 bbls. **Daily Production July 1, 1937:** Shut in. **Gravity:** 33-35. **Oil Outlet:** Tank trucks. **Principal Leaseholders:** Harry Adams Corp., Amerada Pet. Corp., Atlantic Ref. Co., Humble Oil & Ref., Ohio Oil Co., Shell Pet. Corp., Skelly Oil Co., Standard Oil Co. of Texas, Magnolia Pet. Co.

WASSON

Discovery Well: Amon G. Carter and Continental Oil Co.'s A. L. Wasson 1, SW SW NW of P. S. L. Sec 48, Blk A-X, June 19, 1937. **Means of Discovery:** Geophysical. **Type Structure:** Anticline with NE to SW trend. **Producing Formation:** Permian limestone 4880-4959 ft. **Producing Area:** Single well area, but structural position of outlying tests underway forecasts possibilities of large field. **Daily Production July 1, 1937:** 150 bbls; 1 well. **Potential:** 332 bbls, July 1, 1937. **Gravity:** 34-35. **Oil Outlet:** Local fuel sales

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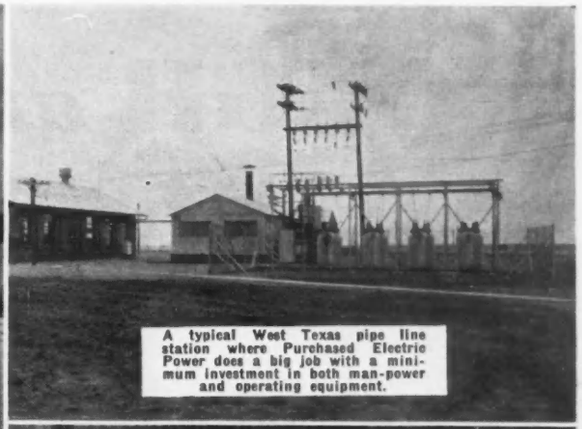

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to drilling tests. **Rigs Running July 1, 1937:** 7. **Principal Leaseholders:** Amon G. Carter, Continental Oil Co., Amerada Pet. Corp., Phillips Pet. Co., York & Harper, Inc., Indian Territory Illiminating Co., Shell Pet. Corp., Skelly Oil Co., Coline Oil Co. (Santa Fe Ry.), The Texas Company, Standard Oil Co. of Texas, Cascade Pet. Co.

GARZA COUNTY

JUSTICEBURG

Discovery Well: Emerald Oil Co. (was B. V. Blackwell et al's) J. M. Boren 1, NW¼ 136, Blk 5, H&GN Ry Sur, May, 1926. **Means of Discovery:** Surface geology. **Type Structure:** Anticline. **Producing Formation:** Permian lime 1962 to 2010 ft. **Producing Area:** 400 acres; not defined. **Extent of Development:** Productivity not so great as to encourage active development. **Production to 1937:** 52,100 bbls. **Daily Production July 1, 1937:** 22 bbls, 4 wells. **Potential:** All marginal wells. **Gravity:** 38. **Oil Outlet:** Tank car and trucks. **Rigs Running July 1, 1937:** None. **Principal Leaseholder:** Emerald Oil Co. **Remarks:** Discovery well was located one mile east of previously drilled location which had show at 2015-25 ft.

POST

Discovery Well: M. L. Richards' J. R. Sullivan 1, NW NW NW Sec 3, Blk 5, Aycock Sur, July 26, 1935. **Means of Discovery:** Random drilling. **Type Structure:** Structural high. **Producing Formation:** Lime from 2776 to 3200 ft. **Producing Area:** 160 acres. **Extent of Development:** Indications are present producing wells may be edge locations on a large closure. **Deepest Test:** Scaprito et al's Post Estate 1, deep test, is exploring lime below 3500 ft. **Production to 1937:** No oil marketed because of absence of marketing facilities. **Daily Production July 1, 1937:** 44 bbls, 4 wells. **Potential:** 194 barrels, July 1. **Gravity:** 35.6. **Oil Outlet:** Post Refining Company's nearby skimming plant. **Rigs Running July 1, 1937:** 2. **Principal Leaseholders:** M. L. Richards et al, Gar-Tex Oil Co., Grisham Hunter Oil Corp. et al, Honolulu Oil Corp., Ltd., Devonian Oil Co., Magnolia Pet. Co. **Remarks:** This area is a northeast outpost to production in West Texas Permian Basin.

GLASSCOCK COUNTY

CARTER

Location: About 8 miles southeast of World field, nearest production. **Discovery Well:** Floyd C. Dodson & B. A. Duffey's J. G. Carter 1, SW SW SW Sec 8, Blk 33, T&P Ry Survey, T-3-S, Sept. 12, 1936. **Means of Discovery:** Surface geology together with subsurface from wells drilled over the region, suggesting a structural trend parallel with the Howard-Glasscock field. **Type Structure:** Anticline plunging towards the southwest. **Producing Formation:** Brown, sandy-lime 2623-2667 ft. **Producing Area:** Partially defined. **Extent of Development:** Single well pool. **Deepest Test:** Discovery, 2669 ft. **Production to 1937:** No outlet. **Daily Production July 1, 1937:** 12 bbls. **Potential:** Marginal well. **Gravity:** 29-32. **Oil Outlet:** Tank truck to Cosden Petroleum Corp.'s refinery near Big Spring. **Rigs Running July 1, 1937:** 1. **Principal Leaseholders:** Floyd C. Dodson & B. A. Duffey, Fleetborn Oil Corp. et al, Skelly Oil Co., Phillips Pet. Co., Shell Pet. Corp., Mid-Continent Pet. Corp., Atlantic Ref. Co., Tide Water Associated Oil Co., Ohio Oil Co., and Humble Oil & Ref. Co. **Remarks:** Fleetborn Oil Corp. et al drilled a well in SW SW SE Section 19, about 2 miles south by west of discovery, and one each in NEc and SEc Sec 13, Blk 34, being south and west of the producer. The latter 2 showed some free oil, and subsurface data suggest a probable anticlinal axis between these 2 failures.

SETTLES (Shallow)

Discovery Well: Continental Oil Co and Group One Oil Corp. (was Marland Oil Co.'s) W. R. Settles 1, CSW¼ Sec 159, W&NW Ry Sur, Blk 29, March 8, 1927. **Means of Discovery:** Subsurface projection of productive trend from Howard-Glasscock pool. **Type Structure:** Anticline. **Producing Formation:** Upper Permian Sand from 1250 to 1300 ft. **Producing Area:** 600 acres or more. **Extent of Development:** Development held in abeyance until the past year. **Deepest Test:** Discovery; dry at 3504 ft after encountering top water at 2710 ft. **Production, 1937:** Included with Howard-Glasscock district. **Daily Production July 1, 1937:** 813 bbls, 35 wells. **Potential:** 14,693 bbls, July 1. **Gravity:** 32-33. **Oil Outlet:** Humble Pipe Line Co. **Rigs Running July 1, 1937:** 2. **Principal Leaseholders:** Continental Oil Co., and Group No. 1 Oil Corp. **Remarks:** Operators drilled 35 consecutive wells to the shallow pay and have obtained a total potential of 14,693 bbls.

WORLD-McDOWELL

Discovery Well: World Oil Co.'s L. S. McDowell 1-C, CNW SW NE Sec 21, Blk 34, T&P Ry Sur, T-2-S, April 28, 1929. **Means of Discovery:** Subsurface geology. **Type Structure:** Closed anticline. **Producing Formation:** Limestone 2350 to 2398 ft. **Producing Area:** 160 acres. **Extent of Development:** Held in check until late last year; recently confined to offset drilling. **Deepest Test:** John I. Moore, Loffland Bros. Co. et al's McDowell 1, CSE NE 22, Blk 34, T-2-S, abandoned in Ellenberger at 10,906 ft. **Estimated Ultimate Recovery:** 1,200,000 bbls. **Production January 1, 1937:** 152,372 bbls. **Indicated Remaining Reserve:** 1,047,628 bbls. **Daily Production July 1, 1937:** 197 bbls, 5 wells. **Potential:** 5540 bbls, July 1. **Gravity:** 26-27. **Oil Outlet:** Cosden Pipe Line Co. **Rigs Running: July 1, 1937:** 2. **Principal Leaseholders:** World Oil Co., Loffland Bros. & John I. Moore Unit.

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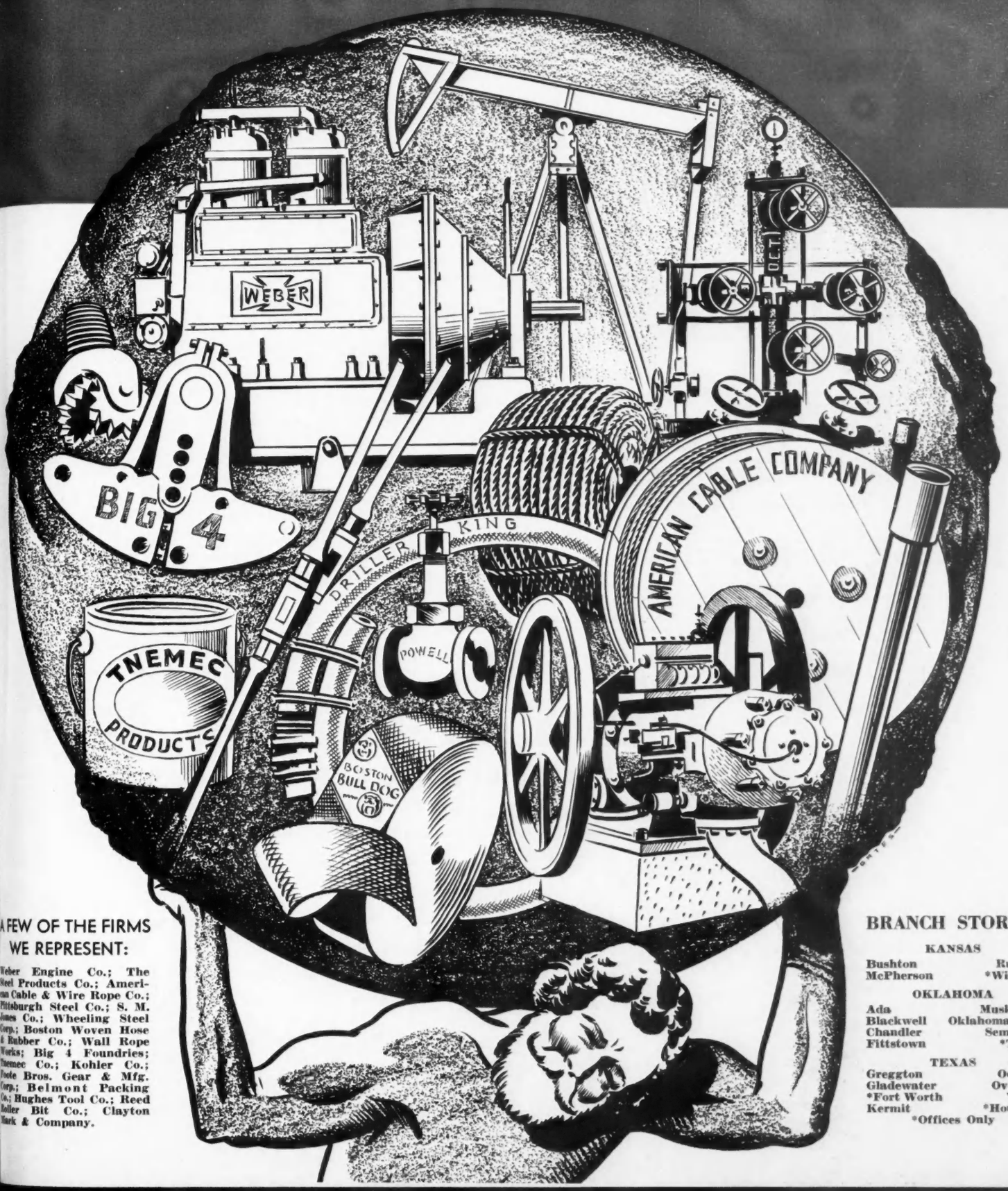

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HOCKLEY COUNTY

SLAUGHTER

Discovery Well: The Texas Company et al's Bob Slaughter 1, 725 ft from S. & 665 feet from W. lines Labor 83, League 38, Zavala C. S. L. Sur, April 17, 1937. **Means of Discovery:** Geophysics. **Type Structure:** Anticline. **Producing Formation:** Permian lime 4980 to 5023 ft. **Producing Area:** Undefined. **Extent of Development:** Single well pool. **Deepest Test:** Discovery plugged back from 5030 ft. **Daily Production July 1, 1937:** 150 bbls, 1 well. **Potential:** 502 bbls, July 1. **Gravity:** 30.6. **Oil Outlet:** Tank truck. **Rigs Running July 1, 1937:** 1. **Principal Leaseholders:** Stanolind O & G Co., Honolulu Oil Corp.

HOWARD & GLASSCOCK COUNTIES

BIG SPRING DISTRICT (*)

Discovery Well: Discoveries listed as to areas proven productive which later became part of the major pool. **Type Structure:** Long anticline producing generally from superimposed highs along a 20 mile trend. Productive areas disassociated although controlled by major anticline. **Producing Formation:** Yates sand 1300 to 1400 ft (spotted in occurrence); sand at 1650 to 1800 ft; limestone at 2200 ft; limestone at 3000 ft. **Producing Area:** 14,600 acres. **Extent of Development:** The four strata producing are considered defined as to area and occurrence. Efforts to extend production have been unsuccessful. **Estimated Ultimate Recovery:** 111,500,000 bbls. **Production to 1937:** 72,360,100 bbls. **Indicated Remaining Reserve:** 39,139,900 bbls. **Daily Production July 1, 1937:** 8240 bbls; 236 wells. **Potential:** 191,235 bbls, July 1, 1937. **Gravity:** 1400 ft production, 33; 1800 ft production, 32; 2200 ft production, 26-27; 3000 ft production, 26-27. **Rigs Running July 1, 1937:** 17. **Principal Leaseholders:** Amerada Petroleum Corp., American Maracaibo Co., Otis Chalk, Continental Oil Co.-Group One Oil Corp., Empire Oil & Refining Co., Green Production Co., Gulf Oil Co., Humble Oil & Refining Co., Fred Hyer, Imperial Oil Co., Johnson & Bruce, Magnolia Petroleum Co., Merrick & Briston, Merrick & Lamb, Pure Oil Co., Royal Oil & Gas Co., Schermerhorn Oil Co., Shell Petroleum Corp., Standard Oil Co. of Texas, Stanolind Oil & Gas Co., Sun Oil Co., Superior Oil & Gas Co., Ward Oil Corp., Lion Oil & Refining Co., Noble & Co., Plymouth Oil Co., Tide Water Associated Oil Co., Tribal Oil Co., W. E. Production Co. **Remarks:** Production of Big Spring is coming from lensing and change of porosity conditions in minor domes of accumulation reflected to the surface from an anticlinal high of from 150 to 300 feet on the Big Lime.

(*) Embraces all Howard County areas, excepting the Iatan-East Howard and Harding fields, and production in Glasscock County, exclusive of the World-McDowell and Carter fields.

HOWARD COUNTY

CHALK

Discovery Well: Magnolia Petroleum Co.'s (was Owens-Sloan et al's) Otis Chalk 1-A, CSE SE NE 113, Blk 29, W&NW Ry Sur, April 18, 1926. **Means of Discovery:** Geology. **Type Structure:** Anticline. **Producing Formation:** Permian sand 1575 to 1590 ft. **Producing Area:** Consolidated with Howard-Glasscock. **Production to 1937:** Included with Howard-Glasscock. **Gravity:** 31-32. **Principal Leaseholders:** Magnolia Pet. Co., Continental Oil Co., and Otis Chalk et al.

CLAY-HYER

Discovery Well: Continental Oil Co.'s (was Fred Hyer et al's) H. R. Clay 1, near CSW NE NW 139, W&NW Ry Sur, Blk 29, Nov. 21, 1925. **Means of Discovery:** Geology. **Type Structure:** Anticline. **Producing Formation:** Permian sand at 1550 and from 1775 to 1800 ft. **Extent of Development:** Area has reached an advanced stage of development. **Production to 1937:** Included with Howard-Glasscock. **Daily Production:** See Howard-Glasscock. **Gravity:** 31-34. **Oil Outlet:** Cosden Pipe Line Co., Humble Pipe Line Co., Coltex Refining Co.

HARDING

Discovery Well: Continental-Group No. One Oil Corp. (was Marland and Texon Oil Co.'s) J. B. Harding 1, near CSW 19, Blk 33, T&P Ry Sur, T-1-S, May 5, 1927. **Means of Discovery:** Subsurface and projected productive trend. **Type Structure:** Anticline. **Producing Formation:** Permian lime from 3170 to 3200 ft. **Producing Area:** Undefined. **Extent of Development:** Only two producers completed, these being about one mile apart, the latter completion being north and east of the discovery. **Production to 1937:** 57,435 bbls. **Daily Production July 1, 1937:** 20 bbls, 2 wells. **Potential:** Both producers marginal wells. **Gravity:** 28-29. **Oil Outlet:** Humble Pipe Line Co. **Rigs Running July 1, 1937:** 2. **Principal Leaseholders:** Continental-Group One Oil Corp., Moore Bros. Corp. **Remarks:** Discoverers originally controlled all surrounding acreage but due to small calibre production, surrendered all leases except a 40-acre tract around each well. Last March Moore Bros. Corp. obtained a block of 8900 acres around the two pumpers and assumed an obligation to drill three tests, which are located so as to determine possibilities of the area.

HYMAN

Discovery Well: Magnolia Pet. Co.'s Minna & Harry Hyman 1, 100 ft S. of CSE 88, Blk 29, W&NW Ry Sur, June 17, 1929. **Means of Discovery:** Oil showings on offset location. **Type Struc-**

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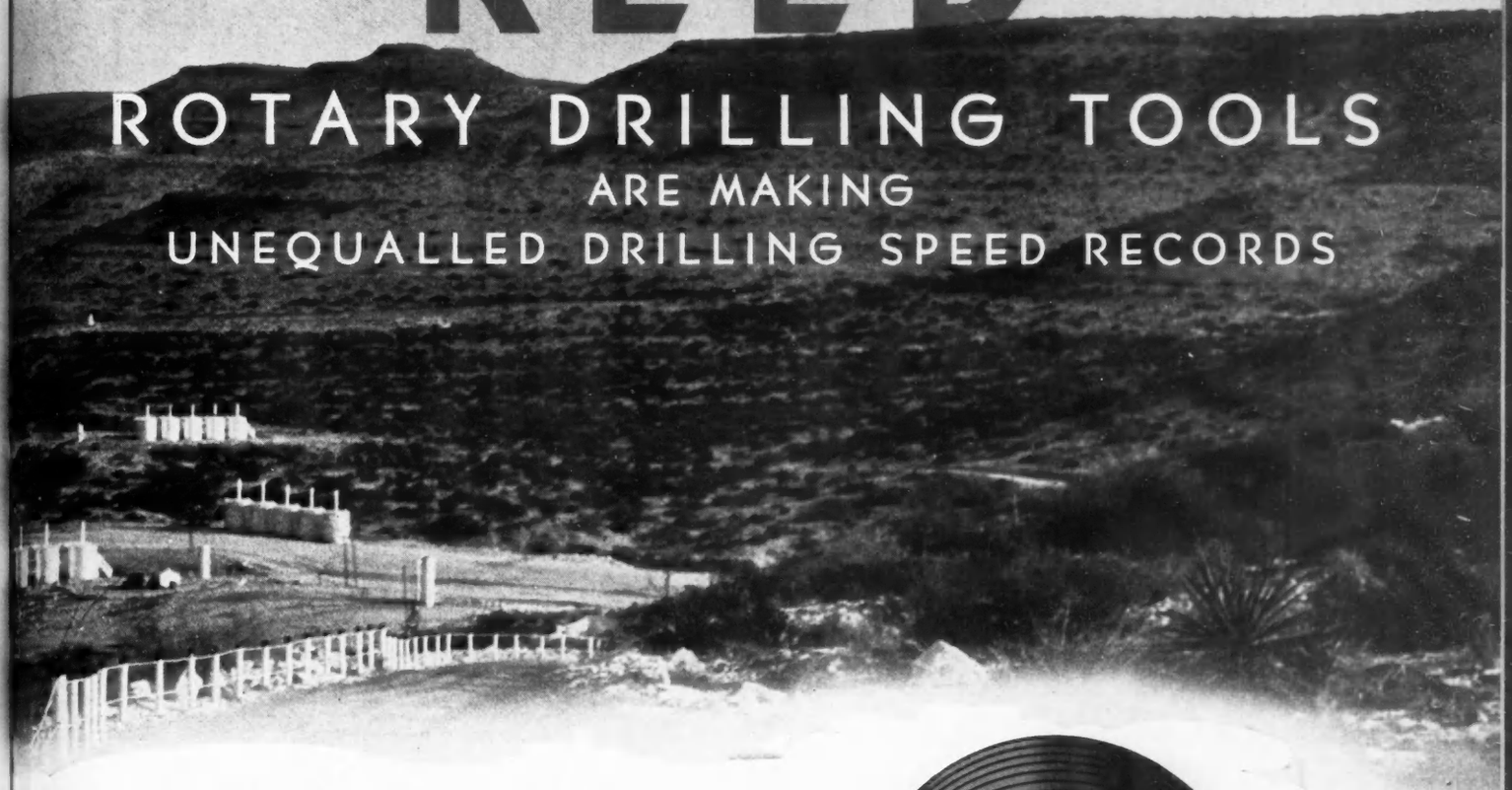

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ture: Anticlinal trend. **Producing Formation:** Sand, 1300 to 1325 ft. **Producing Area:** 100 acres. **Extent of Development:** Limited to approximately 100 acres; seven producers completed. **Deepest Test:** 3605-ft failure, Deep Rock Oil Co.'s W. T. Scott 1, C SE W&NW Section 88. **Production to 1937:** Included with Howard-Glasscock district. **Daily Production July 1, 1937:** Consolidated with Howard-Glasscock district. **Gravity:** 31-32. **Oil Outlet:** Coltex Refining Co. **Rigs Running July 1, 1937:** 1. **Principal Leaseholders:** Magnolia Pet. Co. and Johnson & Bruce. **Remarks:** Discovery well pumps 2 barrels oil daily. Area is one of several small pools developed in district.

LOCKHART-SCOTT

Discovery Well: Lockhart & Co.'s W. T. Scott 1, CSW NW SE 86, W&NW Ry Sur, Blk 29, Dec. 27, 1926. **Means of Discovery:** Geology. **Type Structure:** Unidentified. **Producing Formation:** Permian lime from 2740 to 2825 ft. **Producing Area:** Single well pool. **Deepest Test:** Discovery pb from sulphur water at 3220 ft. **Production to 1937:** Unrecorded. **Gravity:** 29-30. **Remarks:** Discovery well depleted and abandoned after being on production spasmodically for several years.

O'DANIEL

Discovery Well: Magnolia Pet. Co.'s (was Choate-Henshaw's) M. H. O'Daniel 1, CSE 34, Blk 30, T&P Ry Sur, May 12, 1926. **Means of Discovery:** Geology. **Type Structure:** Anticline. **Producing Formation:** Permian limestone 2640 to 2700 ft. **Extent of Development:** Single well pool. **Deepest Test:** Magnolia's O'Daniel 2, C SE SW TP Sec 39, Blk 30, T-1-S, missed pay and abandoned at 3600 feet. **Production to 1937:** 20,076 bbls. **Daily Production July 1, 1937:** 5 bbls. **Gravity:** 26. **Oil Outlet:** Col-Tex Refining Co. **Rigs Running July 1, 1937:** None. **Principal Leaseholder:** Magnolia Pet. Co. **Remarks:** More extensive exploration work may link this one-well pool to other producing areas in district. Discovery currently pumping 5 bbls. daily.

ROBERTS

Discovery Well: Magnolia Pet. Co.'s Dora Roberts 1, CSE SE SW 136, Blk 29, W&NW Ry Sur, Oct. 24, 1927. **Means of Discovery:** Geology. **Type Structure:** Anticline. **Producing Formation:** Permian lime from 2950 to 2975 ft. **Indicated Remaining Reserve:** included with Howard-Glasscock district. **Gravity:** 27-29. **Remarks:** The dolomite horizon uncovered by this discovery proved to be the most prolific of the various oil zones in the district. The ability of the discovery to produce is shown by the production to Feb. 1, 1928 from the time of completion; a period of about four months, during which time the total output was 217,404 bbls.

SETTLES-HENSHAW

Discovery Well: American-Maracaibo Co.'s (was Henshaw Oil Corp.'s) W. R. Settles 1-A, CNW SW NE 6, Blk 32, T&P Ry Sur, T-2-S, Aug. 7, 1928. **Means of Discovery:** Geology: **Type Structure:** Anticline. **Producing Formation:** Oolitic lime between 2200 and 2250 ft. **Producing Area:** Included with Howard-Glasscock. **Production to 1937:** Included with Howard-Glasscock. **Daily Production July 1, 1937:** 8240 bbls, 236 wells. **Potential:** 191, 235 bbls, July 1. **Gravity:** 32 - 33. **Rigs Running July 1, 1937:** 2. **Principal Leaseholders:** Continental Oil Co., American-Maracaibo Co., Humble Oil & Ref. Co., W. E. Production Co., Plymouth Oil Co., Lee Pet. Corp., Shermerhorn Oil Corp., Shell Pet. Corp., Lion Oil Ref. Co., Tide Water Associated Oil Co., Amerada Pet. Corp., Phillips Pet. Co., Noble Oil Co., Brazos Production Co., Cardinal Oil Co., W. P. Edwards et al., Empire Oil & Ref. Co., General Crude Oil Co., W. P. Luse & W. L. Pickens, Richmond Drilling Co., Samedan Oil Corp., Standard Oil Co. of Texas, Tribal Oil Co., Witherspoon & Glasscock.

SNYDER

Discovery Well: Moore Bros. Corp. et al's T. P. Land Trust Co. 1 NE NE NE Sec 33, Blk 30, T&P Ry Sur, T-1-S, May 22, 1937. **Means of Discovery:** Subsurface geology. **Type Structure:** Anticline. **Producing Formation:** Permian limestone 2700-2900 ft, locally known as the Denman horizon. **Producing Area:** Undetermined, with possibilities of embracing 4½ square miles. **Extent of Development:** Single well pool. **Deepest Test:** Magnolia Pet. Co.'s O'Daniel 2, about 1¼ miles southeast, abandoned at 3600 ft. **Daily Production July 1, 1937:** 100 bbls, 1 well. **Potential:** 213 bbls, July 1, 1937. **Gravity:** 29-30. **Oil Outlet:** Shell Pipe Line Corp. **Rigs Running July 1, 1937:** 3. **Principal Leaseholders:** Moore Bros. Corp., Eastland Oil Co., Iron Mountain Oil Co., Magnolia Pet. Co., Sun Oil Co., and Shell Petroleum Corp. **Remarks:** Previous failures in the area, which is on a trend betweeen Iatan-East Howard County and South Howard County fields, showed sufficient oil and gas above the water table to indicate a small pool.

IRION COUNTY

MERTZON

Discovery Well: Irion Oil Co.'s (was R. E. Moore & M. Kennedy's) F. Tankersley 1, NW NE SW 23, GC&SF Ry Sur, July 22, 1928. **Means of Discovery:** Geology. **Type Structure:** Unidentified. **Producing Formation:** Sandy-limestone 1340 to 1350 ft. **Producing Area:** 200 acres. **Extent of Development:** Virtually defined. **Production to 1937:** 101,850 bbls. **Daily Production July 1, 1937:** 50 bbls, 10 wells. **Potential:** All marginal producers. **Gravity:** 37-38. **Oil Outlet:** Mertzon Refining Co.'s nearby skimming plant. **Rigs Running July 1, 1937:** 1. **Principal Leaseholders:** L. R. Pearson et al, Fox-Denny & Andrews, Perry I. Fox and Mintex Oil Co. **Remarks:** Most of properties in field have changed ownership frequently. Most productive leases located some distance from the original discovery.

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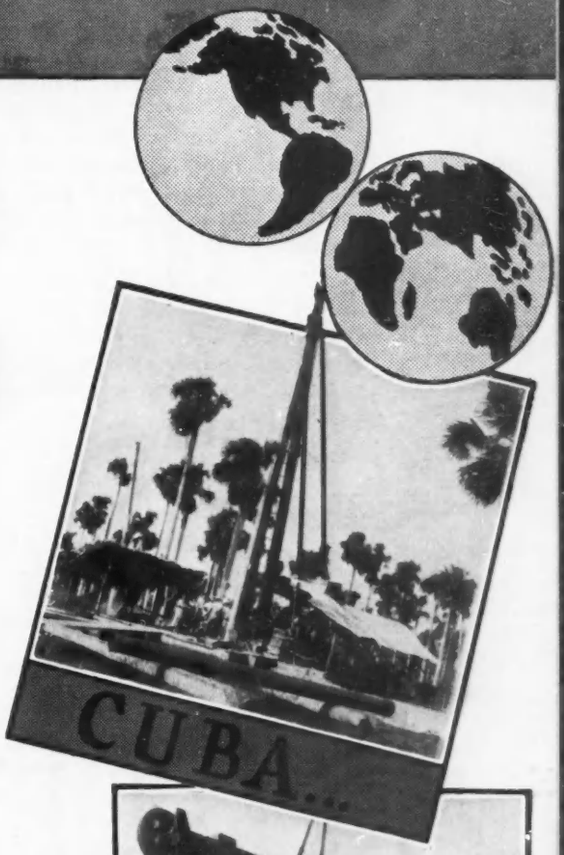

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JONES COUNTY

AVOCA

Discovery Well: Iron Mountain Oil Co.-Humble Oil & Ref. Co.'s Carl Olander 1, NE NE SW of BBB&C Ry, Sec 196, July 6, 1937. **Means of Discovery:** Subsurface geology. **Type Structure:** Closure. **Producing Formation:** Lower Canyon limestone series, probably Palo Pinto at 3241-50 ft. **Producing Area:** Single well area. **Extent of Development:** First deep test for structure. **Gravity:** 39-40. **Oil Outlet:** Humble Pipe Line Co. **Principal Leaseholders:** Iron Mountain Oil Co., Humble Oil & Ref. Co., Jones & Stasney, Danciger Oil & Refineries, Inc., Maracaibo Oil Corp., Ungren & Frazier, and Fain-McGaha Oil Corp. **Remarks:** Considerable importance attached to discovery, since it offers possibilities of deeper oil levels in other eastern Jones County fields. This is the first producer in the Canyon for the county. Well flowed by heads natural with open hole below 1865 feet. After setting oil string, the well was treated with 3000 gallons of acid and flowed 630 barrels first three hours.

CONDOR-SAYLES

Discovery Well: Condor Pet. Co.'s Henry Sayles 1, near CW½ NW NW Lot 3, T&P Ry Sur, Blk 20, Jan. 8, 1933. **Means of Discovery:** Surface and subsurface geology. **Type Structure:** West plunging anticlinal nose with closure. **Producing Formation:** Cook sand lime 1915 ft. **Extent of Development:** Within recent months activity at the south end of this production has added substantial acreage to productive area. **Daily Production July 1, 1937:** 438 bbls, 19 wells. **Potential:** 4069 bbls, July 1. **Gravity:** 37. **Oil Outlet:** Onyx Ref. Co. **Principal Leaseholders:** Condor Pet. Co., Lewis Production Co.

GUITAR

Discovery Well: R. B. Farris, L. Fikes-Ungren & Frazier's Guitar Trust 1, NWc S½ NE 44, Blk 15, T&P Ry Sur, Oct. 11, 1936. **Means of Discovery:** Subsurface geology. **Type Structure:** Nosing anticline with closure. **Producing Formation:** Flippen (Upper Cook.) between 1975 and 2025 ft. **Producing Area:** Indicated at 180 acres. **Extent of Development:** Productive area defined on E., NE & SE. **Deepest Test:** 2260 ft. **Production Jan. 1, 1937:** Included with Jones County Miscellaneous. **Gravity:** Sand production, 37-38; lime production, 42-43. **Oil Outlet:** Humble Pipe Line Co. **Rigs Running July 1, 1937:** 6. **Principal Leaseholders:** R. B. Farris, Alliance Oil Co., Ungren & Frazier's Trust Co., L. Fikes, T. Humphrey, J. C. Hunter, Danciger Oil Refineries, Inc., Brown Eagle Oil Co. and S. B. Roberts. **Remarks:** This area has possibilities of production in Hope lime at approximately 2150 ft, as has been indicated in scattered tests of general area.

HAWLEY

Discovery Well: Sinclair Prairie Oil Co.'s (was F. E. Shaheen-Prairie Oil & Gas Co.'s) S. W. King 1, 6750 ft S. & 150 ft W. from NE lines, M. Bueno Sur, 197, A-14, Aug. 7, 1930. **Means of Discovery:** Surface and subsurface geology. **Type Structure:** Nosing anticline. **Producing Formation:** Tannehill sand, 1950 to 1960 ft; Bluff sand, 2050 to 2070 ft; Flippen sand, 2080 to 2100 ft; Upper Hope lime, 2200 ft; and Lower Hope sand, 2220 ft. **Producing Area:** 800 acres. **Extent of Development:** Productive area subject to minor extension. **Production to 1937:** 1,018,571 bbls. **Daily Production July 1, 1937:** 4130 bbls, 81 wells. **Gravity:** 37-44, varying with productive horizon. **Oil Outlets:** Humble Pipe Line Co., Moutray Ref. Co., Onyx Ref. Co. **Principal Leaseholders:** Danciger Oil & Refineries, Inc., T. D. Humphry, N. H. Martin & Son, Sinclair Prairie Oil Co., Ungren & Frazier. **Remarks:** Forecasts of ultimate recovery have been made that would place per acre yield at 7500 bbls.

HIGGS

Discovery Well: Roeser-Pendleton, Inc.'s (was Stebbins Oil & Gas Co.'s) J. M. Higgs 1, near CNE NE SE 30, W. T. Scott Sur, April 22, 1927. **Means of Discovery:** Surface geology. **Type Structure:** Nosing anticline with closure. **Producing Formation:** Sand, 1599 to 1611 ft. **Producing Area:** 180 acres. **Extent of Development:** Field defined. **Production to 1937:** 135,000 bbls. **Gravity:** 36-38. **Oil Outlet:** Humble Pipe Line Co. **Rigs Running July 1, 1937:** None. **Remarks:** Original producer depleted and plugged.

LEWIS

Discovery Well: Fain-McGaha Oil Corp.'s Claud Lewis 1, near CE½ NW SW 37, Blk 15, T&P Ry Sur, April 21, 1937. **Means of Discovery:** Subsurface geology. **Type Structure:** Plunging anticlinal nose with little flattening. **Producing Formation:** Bluff Creek sandy lime from 1915 to 1935 ft. **Producing Area:** 80 acres. **Gravity:** 38-40. **Oil Outlet:** Humble Pipe Line Co. **Principal Leaseholders:** Fain-McGaha Oil Corp., Humble Oil & Ref. Co., Danciger Oil & Refineries, Inc., Hugh King-Cortez Oil Co.

LUEDERS

Discovery Well: Bridwell Oil Company, L. Fikes' (was R. B. Farris, L. Fikes et al's) J. W. Jennings 1, CE½ NE SE 207, Orphan Asylum Lands, July 19, 1935. **Means of Discovery:** Surface indications. **Type Structure:** Unknown. **Producing Formation:** King sand between 2025 and 2040 ft. **Producing Area:** Undefined. **Extent of Development:** Pool not developed. **Production to 1937:** 200,000 bbls. **Gravity:** 39-40. **Oil Outlet:** By owner's pipe line to Panhandle Ref. Co. **Rigs Running June 1, 1937:** 3. **Principal Leaseholders:** T. D. Humphrey et al, L. Fikes, Bridwell Oil Co.

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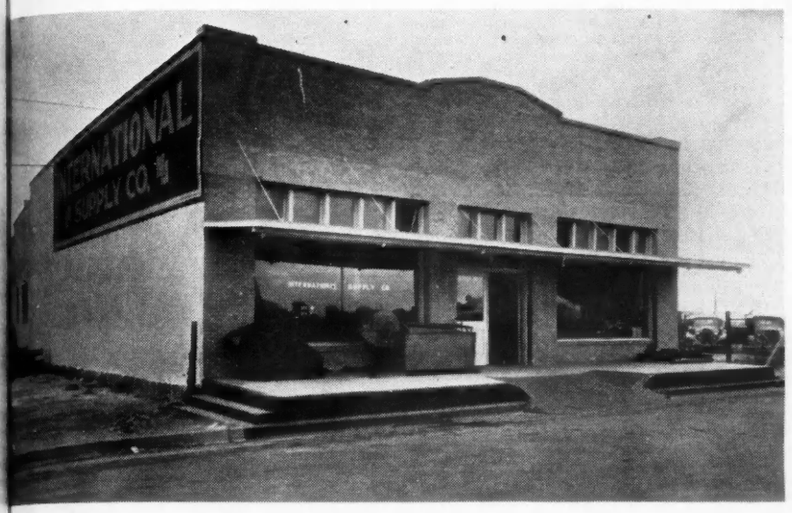

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NOODLE CREEK

Discovery Well: Phillips Pet. Co.'s Joe Winters 1, SW SW NW 19, Blk 19, T&P Ry Sur, Sept. 5, 1926. **Means of Discovery:** Surface geology. **Type Structure:** Nosing anticline. **Producing Formation:** Pennsylvania limestone 2515 to 2530 ft. **Producing Area:** 2000 acres. **Extent of Development:** Productive limits defined by failures and nominal producers. **Deepest Test:** Deep production was proved by Continental Oil Co.'s (was Marland Oil Co.'s) Harris 2, CNE SE SE 18, which topped broken lime pay at 3036 feet. This failed to encourage development of the lower horizon. **Production to 1937:** 4,136,200 bbls. **Daily Production July 1, 1937:** 536 bbls, 85 wells. **Potential:** 628 bbls, July 1, 1937. **Gravity:** 39-40. **Oil Outlet:** Humble Pipe Line Co. **Rigs Running July 1, 1937:** 1. **Principal Leaseholders:** Phillips Pet. Co., Clay & Lancaster, Inc., Cosden Pet. Corp., R. L. Crawford et al, Hoffman & Page Co., J. M. Johnson et al, Humble Oil & Ref. Co., C. C. Julian Oil & Royalty Co., Rhodes & Higher, Roberts Oil Corp., Roeser & Pendleton, Inc., Sinclair Prairie Oil Co., J. D. Sandefer, Jr. et al, Snowden & McSweeney Co., Southern Oil Corp.-Natfonal Pet. Corp. **Remarks:** Deeper production was not sustained, but production from original horizon highly commercial.

SANDY RIDGE

Discovery Well: Sandy Ridge Oil Corp.'s (was J. P. Byram's) Percy Jones 1, near SWc NW¼ Sec 5, Blk 15, T&P Ry Sur, Oct. 20, 1934. **Means of Discovery:** Subsurface geology. **Type Structure:** Nosing anticline with closure. **Producing Formation:** Bluff Creek sand member of Cisco series at 1900 to 1960 ft. Also Swastika lime at 2340 ft. **Producing Area:** 320 acres, but not defined. **Deepest Test:** 2340 ft. **Production to 1937:** Estimated 50,000 bbls. **Gravity:** 37-38. **Oil Outlet:** Humble Pipe Line Co. **Principal Leaseholders:** Sandy Ridge Oil Corp., W. J. Rhodes, Barnsdall Oil Co., Oil States Exploration Co.-Forest Development Co., Danciger Oil & Refineries, Inc.-L. H. Pearson (undeveloped), and Roeser-Pendleton, Inc. (undeveloped).

SMITH-TINER (Noodle Creek Extension)

Discovery Well: Roberts Oil Corp. et al's (was Hutson-Weaver & Shaheen's) A. T. Smith 1-A, near CNE SE SW 51, Blk 18, T&P Ry Sur, Jan. 20, 1928. **Means of Discovery:** Trend drilling from Noodle Creek production. **Type Structure:** Surface anticlinal nose separated from Noodle Creek by syncline. **Producing Formation:** Broken strata, 2490 to 2535 ft. **Production to 1937:** Incorporated with Noodle Creek field. **Gravity:** 39-40. **Oil Outlet:** Humble Pipe Line Co. **Remarks:** This productive area possibly related to Noodle Creek pool.

SPURRIER

Discovery Well: N. H. Martin & Son's M. & E. B. Spurrier 1, SWc 20-ac lse, Lot 1, Blk 6, W. C. Walker Sur, July 7, 1936. **Means of Discovery:** Subsurface geology. **Type Structure:** Nosing anticline. **Producing Formation:** Hope sand at 1935 to 1965 ft. **Producing Area:** One well pool. **Extent of Development:** The second test drilled on structure was a dry hole, and other failures in immediate vicinity tend to restrict production to small area. **Daily Production July 1, 1937:** Shut in. **Gravity:** 37-39. **Oil Outlet:** None. Well is isolated from outlet or other production.

WHITE

Discovery Well: Oil States Exploration Co. et al's J. H. White 2, near CS½ NW Sec 6, Blk 15, T&P Ry Sur, Dec. 31, 1936. **Means of Discovery:** Trend drilling. **Type Structure:** Nosing anticline. **Producing Formation:** Larrimore sandy lime, 2329 to 2339 ft. **Producing Area:** Undefined. **Extent of Development:** Company's first test abandoned at 2376 ft after passing up favorable showings in the Larrimore. Shallow horizon for this area established 6-23-37 when the Company's J. H. White 2-B, located about 800 feet NE of its producer pumped 190 bbls initial at 1742-1752 ft. **Gravity:** 37-39. **Oil Outlet:** Humble Pipe Line Co. **Remarks:** The shallow strata found productive in this area may later be correlated with production in Sandy Ridge field.

LOVING COUNTY

MASON

Discovery Well: Michigan Oil & Gas Co.'s (was Mason Oil Co.'s) M. Kyle 2, SW SW NE 20, Blk 55, T&P Ry Sur, T-1, Jan. 20, 1937. **Means of Discovery:** Subsurface geology. **Type Structure:** Anticlinal nosing. **Producing Formation:** Delaware formation near lime-sand contact; from 3895 to 3903 ft. **Producing Area:** Undefined. **Extent of Development:** South offset entered water. West offset to discovery evidently better producer than original well. **Daily Production July 1, 1937:** 200 bbls, 2 wells. **Potential:** 767 bbls. **Gravity:** 38.9. **Oil Outlet:** Mason Pipe Line Co. delivers to Pasotex Pipe Line Co. **Rigs Running July 1, 1937:** 4. **Principal Leaseholders:** Michigan Oil & Gas Co., Stanolind Oil & Gas Co., Woodley Petroleum Co., Argo Oil Corp., Continental Oil Co., Roy A. Westbrook & Phillips Drilling Co., Barnsdall Oil Co., D. J. Finley & A. W. Cherry, Sun Oil Co., and Magnolia Pet. Co. **Remarks:** Best gauge of Kyle 2, was 347 bbls per day. Oil possibilities in the area were indicated by the company's Minnie Kyle 1, located about 2 miles east of discovery producer. It showed

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Fig. 103—HERCULES Type A Cast Steel Casing Head with Slips. 3,000 lbs. test.

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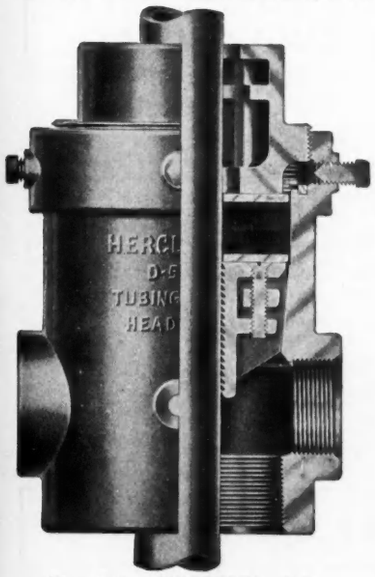

Fig. 209 — HERCULES D-5 Cast Steel Tubing Head with Slips. Full opening. 2,000 lbs. test.

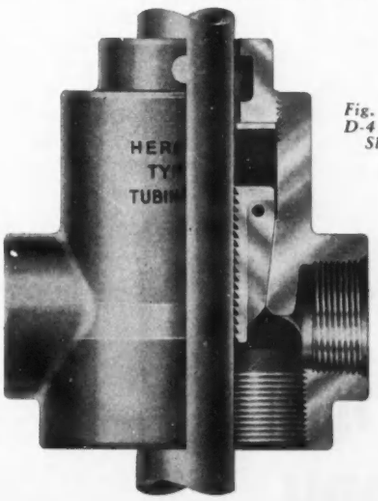

Fig. 208 — HERCULES D-4 Tubing Head with Slips. 2,000 lbs. test.

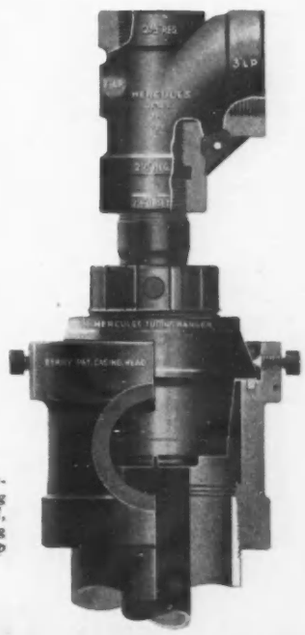

Fig. 216—HERCULES Tubing Hanger with Slips, sitting in Berry pattern casing head, with HERCULES Pumping Flowing Tee Screwed on Top of Tubing.

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oil, gas and salt water at 3970-74 ft before being abandoned at 4002 ft on 11-2-35.

WHEAT

Discovery Well: Lockhart & Co.'s (was P. V. Petroleum Company's) J. J. Wheat 1, Sec 82, Blk 1, W&NW Co. Sur, Sept. 1, 1925. **Means of Discovery:** Drilled on stretch of production showing made by Hoyah-Bell Oil Co.'s L. B. Russell 1, Sec 80, which began flowing by heads 9-21-21 at 4270 ft. but was junked. **Type Structure:** Anticlinal nosing. **Producing Formation:** Delaware Mountain lime and sand 4200 to 4300 ft. **Producing Area:** 5000 acres. **Extent of Development:** Productive area defined, with inside locations undrilled. **Deepest Test:** Discovery producer deepened 5-21-27 to 4718 ft without results and plugged back to 4233 ft. **Production to 1937:** 6,395,000 bbls. **Daily Production July 1, 1937:** 1630 bbls, 81 wells. **Potential:** July 1, 3014 bbls. **Gravity:** 38-39. **Oil Outlet:** Pasotex Pipe Line Company. **Principal Leaseholders:** Arkansas Fuel Oil Co., Capitol Oil Co., A. R. Eppenauer, G. D. Fox, Hugo Freels, P. L. Hoffman, Ima Production Co., Wm. Little, G. A. Martin, H. W. Martin, Ninety-Two Petroleum Co., Ohio Fuel Supply Co., Regan-McElvain Co., Sinclair Prairie Oil Co., Slack et al., Standard Oil Co. of Texas, S. F. Tennant, West Texas Petroleum Corp. **Remarks:** Wheat field is the first important oil development of the Delaware Mountain zone in the district. Previous exploratory work in Reeves County yielded limited quantities of oil from this horizon, but production was not maintained. Completions in Wheat field flow for an exceptionally long period.

UNNAMED (Depleted)

Discovery Well: Lewis & Slagel Drilling Co.'s Henderson-Cartwright 1, CNE NW SW 1, Blk 57, T&P Ry Sur, Tsp 1, July 26, 1931. **Means of Discovery:** Random drilling. **Type Structure:** Unidentified. **Producing Formation:** Delaware sandy lime from 3175 to 3180 ft, with salt water at 3180. **Producing Area:** Unindicated by limited development. **Extent of Development:** This well has been abandoned. Production exhausted by going to water. **Gravity:** 40-41. **Rigs Running July 1, 1937:** 1. **Principal Leaseholder:** Barnett Petroleum Corp. **Remarks:** Discovery well produced sufficient oil with water at intervals to indicate area offers prospects of commercial production with properly completed well.

MENARD COUNTY

UNNAMED (Dormant)

Discovery Well: W. C. Barnett et al's Callan City 2, NE SW SW 1, B&SF Ry Sur, Dec 15, 1929. **Means of Discovery:** Random drilling. **Producing Formation:** Lime, 1267 ft. **Extent of Development:** Four tests were drilled in the immediate vicinity of the discovery, each obtaining encouraging shows but failing to establish commercial production. **Deepest Test:** Carried to 2207 and water. **Remarks:** City 2 proved for 1,000,000 cu ft gas which was produced for some time, but pressure decline caused owners to abandon original plans to build a line to a nearby town.

MITCHELL-HOWARD COUNTY

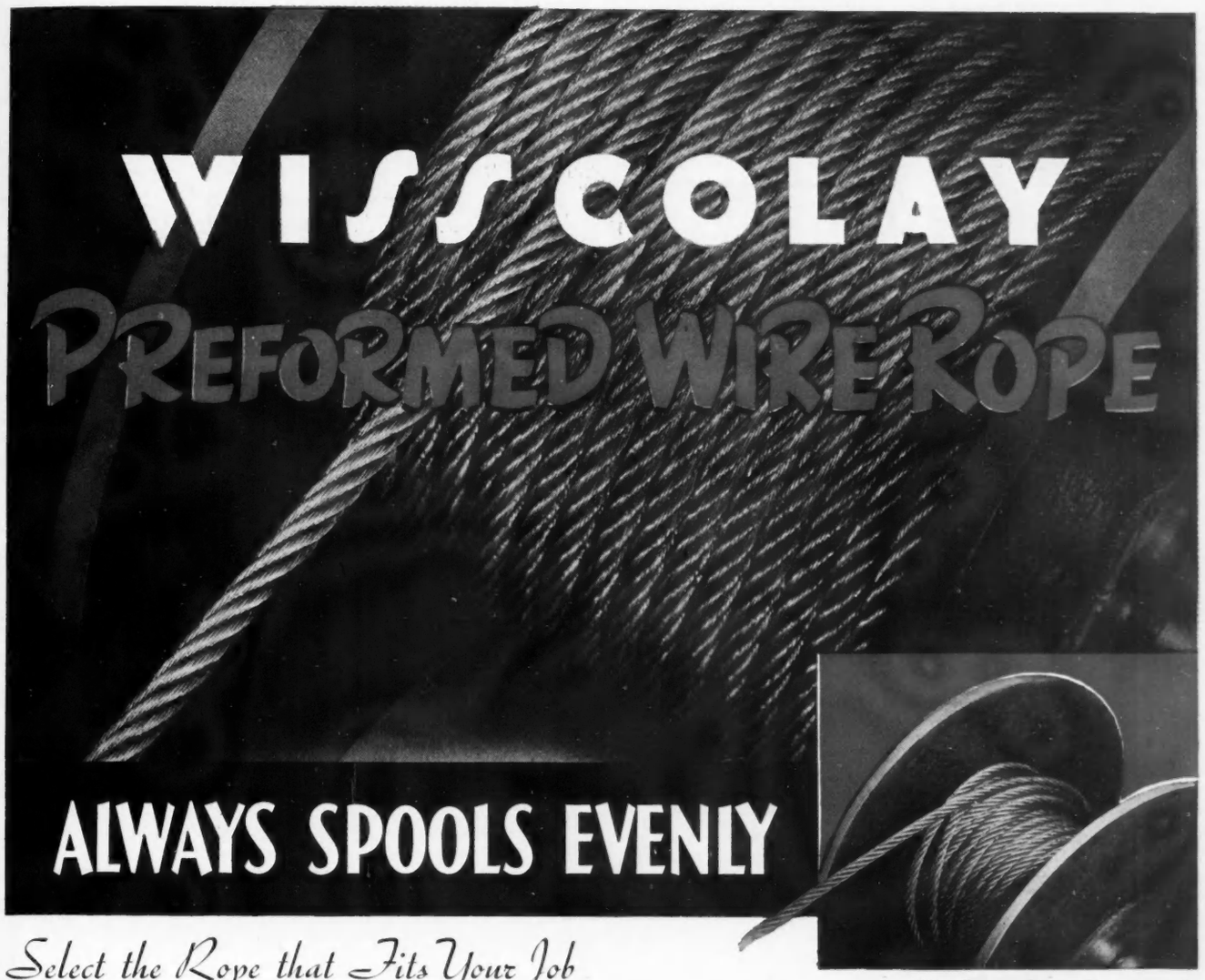
IATAN

Discovery Well: Magnolia Petroleum Co.'s Mary Foster 1, CSE SE SW 17, Blk 29, T-1-S, Aug. 18, 1925. **Means of Discovery:** Trend drilling. **Type Structure:** Anticline. **Producing Formation:** Permian lime, 2600 to 3000 ft. **Producing Area:** 7200 acres. **Extent of Development:** Original production developed near west line of Mitchell County and later exploratory tests established the main producing area, now virtually defined, as centering to the west in Howard County. **Estimated Ultimate Recovery:** 43,200,000 bbls. **Production to 1937:** 5,981,800 bbls. **Indicated Remaining Reserve:** 37,218,200 bbls. **Daily Production July 1, 1937:** 6738 bbls, 211 wells. **Potential:** 79,730 bbls, July 1, 1937. **Gravity:** 29-30. **Oil Outlets:** Magnolia Pipe Line Co., Coltex Refining Co., Glenmore Pipe Line Co. **Rigs Running July 1, 1937:** 5. **Principal Leaseholders:** Ambassador Oil Co., Amtex Petroleum Corp., Bond Oil Corp., Bohago Oil Corp., J. H. Jordon, Trustee, Ennisbrook Oil Corp., FHE Oil Corp., Green Production Co., Illinois Oil Co., Iron Mountain Oil Co., Magnolia Petroleum Oil Co., Merrick & Lamb, Mid-Continent Petroleum Corp., Owen M. Murray et al, Shasta Oil Co., Sinclair Prairie Oil Co., Standard Oil Co. of Texas, Southern Oil Corp of America, R. J. Wallace, W. E. Production Co. and F. W. Merrick, Inc.

MITCHELL COUNTY

WESTBROOK

Discovery Well: The Standard Oil Co. of Texas' T&P Abrams 1, NWc 33, Blk 28, T1 N, Oct., 1920. **Means of Discovery:** Random drilling. **Type Structure:** Narrow anticline with major production from two highs. **Producing Formation:** Permian lime, main pay strata at 3000 ft with higher production at 2400 ft. **Producing Area:** 4400 acres. **Extent of Development:** Pool is considered completely defined. **Deepest Test:** In 1924, the discovery was DD to 3050 ft where it was recompleted for 75 bbls after 280-quart shot. **Estimated Ultimate Recovery:** 10,000,000 bbls. **Production to 1937:** 7,869,143 bbls. **Indicated Remaining Reserve:** 2,138,857 bbls. **Daily Production July 1, 1937:** 900 bbls, 123 wells. **Potential:** All marginal pumpers. **Gravity:** 24-36. **Oil Outlet:** Coltex Refining Co. **Principal Leaseholders:** Eastland Oil Co., Jamison, Pollard, Forster, Magnolia Petroleum Co., Earl Morrison, Standard Oil Co. of Texas. **Remarks:** The discovery of Westbrook, in 1920, was



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UNNAMED (Dormant Gas Area)

Discovery Well: Simms Oil Co.'s I. L. Ellwood 2, CW½ NE SE 29, Blk 18, SP Ry Sur, completed March, 1929. **Means of Discovery:** Surface geology. **Type Structure:** Unidentified. **Producing Formation:** Sand, 597 to 606 ft. **Extent of Development:** 1 well. **Remarks:** Due to lack of market, the owner later abandoned the property.

PECOS COUNTY

COURTNEY-PRYOR

Discovery Well: Phillips Petroleum Co.,'s Courtney-Pryor 1, CE of CNW NWc 78, Blk "CW", T.M. Ry Co. Sur, May 22, 1929. **Means of Discovery:** Geology. **Type Structure:** Unidentified. **Producing Formation:** Lime, 1340 to 1375 ft. **Extent of Development:** Other tests of the immediate area were non-commercial. **Deepest Test:** Discovery DD following production decline, shows that did not indicate commercial production, abd 4376 ft. **Production to 1937:** 24,400 bbls. **Daily Production July 1, 1937:** None. **Gravity:** 25-26. **Rigs Running July 1, 1937:** 1. **Remarks:** This pool has been abandoned, as wells were not profitable to pump. Phillips Petroleum Company has renewed explorations on acreage to the northeast.

MASTERSON

Discovery Well: General Crude Oil Co.'s (was Cranfill-Reynolds Co., M. Warner et al) J. Masterson 1-A, S Cor 104, Blk 10, H&NG Ry Sur, Dec. 16, 1929. **Means of Discovery:** Surface geology. **Type Structure:** Monocline accumulation. **Producing Formation:** Lime between 1249 and 1269 ft in laminated sections with total pay zone extending to 1500 ft. **Producing Area:** 400 acres. **Extent of Development:** Productive limits partially defined by failures and light producers. **Estimated Ultimate Recovery:** 2,000,000 bbls. **Production to 1937:** 231,600 bbls. **Indicated Remaining Reserve:** 1,768,400 bbls. **Daily Production July 1, 1937:** 1,275 bbls, 17 wells. **Potential:** July 1, 4,658 bbls. **Oil Outlets:** Comanche Pipe Line Co., Aero Pipe Line Co., Western Refining Co. **Rigs Running July 1, 1937:** 3. **Principal Leaseholders:** Aero Gas Refining Co., M. H. Black, Samwan Oil Co., A. E. Lynch, J. E. Whiteside.

NETTERVILLE

Discovery Well: Tex-Mex Petroleum Corp.'s G. W. Walling 1, 5610 N and 330 ft E of SWc Sec 59, Blk 8, H&GN Sur, Sept 28, 1924 and recompleted after DD, Feb. 14, 1936. **Means of Discovery:** Surface geology. **Type Structure:** Anticline. **Producing Formation:** Permian sandy-lime, 2210 to 2291 ft and 2400 to 2410 ft. **Producing Area:** 300 acres. **Deepest Test:** Discovery was deepened from 2291 ft to another pay and penetrated to 2458 to 2459 ft where sulphur water was encountered. **Production to 1937:** 561,700 bbls, including Pecos Valley field. **Daily Production July 1, 1937:** 242 bbls, 8 wells. **Potential:** July 1, 1143 bbls. **Gravity:** 33-35. **Oil Outlet:** Private gathering system. **Rigs Running July 1, 1937:** 4. **Principal Leaseholders:** Tex-Mex Petroleum Corp. and Worth Drilling Co.

PECOS VALLEY

Discovery Well: Pecos Crude Oil Purchasing Co.'s (was Pecos Valley Oil Co.) Pecos Valley Fee 1, C W¼ Sec 22, Blk 10, H&GN Ry Sur, Nov. 20, 1928. **Means of Discovery:** Surface geology. **Type Structure:** Anticline. **Producing Formation:** Sand 1350 to 1650 ft. **Producing Area:** 3200 acres. **Production to 1937:** 561,800 bbls, includes Netterville field. **Daily Production July 1, 1937:** 577 bbls, 61 wells. **Potential:** 3,083 bbls, July 1. **Gravity:** 34-35. **Oil Outlet:** Aero Pipe Line Co., Comanche Pipe Line Co., Western Refining Co. **Rigs Running July 1, 1937:** 7. **Principal Leaseholders:** Aero Gas Refining Co., Arnold Oil Co., A. M. Barnes, M. H. Black, R. T. Bucy, R. Cochran, Crump & Watson, D. W. Dittman, R. P. Dorain, Fritz & Gray, Kone Production Co., Lynch & Lyman, C. S. Messiger, Schermerhorn Oil Corp., Tex-Mex Petroleum Corp., E. M. Thomasson Producing Co., Union Oil & Mining Co., C. W. Williams.

ROWAN-TONG

Discovery Well: Independent Oil & Gas Co. Rowan-Tong, Inc.'s J. A. McDonald 1, near CSW NW NE 46, Blk 12, H&GN Sur, Aug. 8, 1929. **Means of Discovery:** Random drilling. **Type Structure:** Unidentified. **Producing Formation:** Lime, 1600 to 1615 ft. **Producing Area:** Undefined. **Extent of Development:** Followup tests branded the discovery as a freak producer. **Gravity:** 28-29. **Oil Outlet:** Texas Pipe Line Co. built line from McCamey to area, but never moved any oil. **Remarks:** The discovery well is remarkable in that it had an initial production estimated at 2000 bbls per day. The pool has been abandoned. Leases and royalty trades, involving several million dollars, within a few weeks after the discovery made its spectacular showing.

TAYLOR-LINK

Discovery Well: Lee Petroleum Corp.'s (was Taylor-Link Oil Co.) University 1, near SE SW SW Section 30, Block 16, June 20, 1929. **Means of Discovery:** Geology. **Type Structure:** Dome. **Producing Formation:** Permian limestone 1600-1700 ft, with small production in sand section at 950-1000 ft. **Producing Area:** 2700 acres. **Extent of Development:** Inside locations are to be drilled. Productive limits considered defined. **Estimated Ultimate Recovery:** 7,600,000 bbls. **Production to 1937:** 4,366,802 bbls. **Indicated Remaining Reserve:** 3,233,198 bbls. **Daily Production July 1, 1937:** 1136 bbls, 55 wells. **Potential:** 3101 bbls, July 1, 1937. **Gravity:** 29-30. **Oil Outlet:** Shell Pipe Line Co. **Rigs Running July 1, 1937:**

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1. **Principal Leaseholders:** Amerada Petroleum Corp., Arkansas Fuel Oil Co., Continental Oil Co., Landreth Production Corp., Lee Petroleum Corp., McClellan & Remlig, A. W. Rutter, Shell Petroleum Corp., Standard Oil Co. of Texas, World Oil Co. (F. G. Lippitt & Sam Letwin) and B. C. Mann et al. **Remarks:** 28 early completions plugged. Several lease owners have planned conservative, but steady development of inside locations.

TAYLOR-LINK (South)

Discovery Well: Illinois Oil Co.'s (was Buell & Hagan) University-Sun 1-B, CS½ SE SE 36, Blk 18, June 22, 1929. **Means of Discovery:** Subsurface. **Type Structure:** Dome. **Producing Formation:** Lime from 1320 to 1332 ft. **Producing Area:** 160 acres. **Extent of Development:** Production is related to but disassociated with Taylor-Link pool proper, which is north 2½ miles with failures separating. **Production to 1937:** Included in original Taylor-Link. **Gravity:** 27-28. **Oil Outlet:** Shell Pipe Line Co. **Rigs Running July 1, 1937:** None. **Principal Leaseholders:** See Taylor-Link.

TOBORG

Discovery Well: Cardinal Oil Co.'s Mrs. F. E. Toborg 1, near CSE SE SW 539, Arnold & Barrett Sur, A-3, Aug. 24, 1929. **Means of Discovery:** Production trend of Yates pool, and core drilling. **Type Structure:** Accumulative source on flank of Yates dome. **Producing Formation:** Dolomitic lime, 350 to 450 ft. **Producing Area:** 1,300 acres. **Extent of Development:** This shallow production completely defined through the drilling of about 200 wells. **Deepest Test:** For information on deeper production see Yates, to which Toborg adjoins. **Estimated Ultimate Recovery:** 7,309,492 bbls. **Production to 1937:** 3,395,204 bbls. **Indicated Remaining Reserve:** 3,914,288 bbls. **Daily Production July 1, 1937:** 2250 bbls, 173 wells. **Potential:** July 1, 11,086 bbls. **Gravity:** 23. **Oil Outlet:** Shell Pipe Line Co. **Rigs Running July 1, 1937:** 2. **Principal Leaseholders:** P. H. Broun, Cardinal Oil Co., Paul Childress, Covette Oil Corp., Stanolind Oil & Gas Co.

WHITE-BAKER (Oil and Gas)

Discovery Well: Gulf Production Co.'s White-Baker 3, near CSE SE NE 4, Blk 207, TC Sur, completed at 1826 ft, Dec 31, 1934, and DD and recompleted July 22, 1935, at 1926 ft, as oil producer since abandoned. **Means of Discovery:** Subsurface geology. **Type Structure:** Unidentified. **Producing Formation:** Lime, broken, 1790 to 1936 ft. **Producing Area:** Considered defined insofar as yielding commercial production. **Extent of Development:** Two other wells beside the discovery were encouraging to the area, although dry holes tended to condemn exploration. Gas only was produced from two completions at 1540 to 1775 and 1611 to 1626 ft. **Deepest Test:** Humble Oil & Refining Co.'s White-Baker 1, CNE¼ 44, Blk z, TC Ry Sur, in Ellenberger of Ordovician, abd 9811 ft, June 25,1934. **Production to 1937:** 2,916 bbls. **Gravity:** 31-32.

YATES

Discovery Well: Ohio Oil Co.'s (was Mid-Kansas O&G Co.-Transcontinental Oil Co.) I. G. Yates 1-A, 2900 ft west of SWc I&GN Ry Co Section 60, Blk 1, but in 2485.5-acre vacancy tract, I. G. Yates Sur A-8195, 1 mile west of Pecos River, Oct. 28, 1926. **Means of Discovery:** Surface geology. **Type Structure:** Broad, elliptical, anticlinal dome. **Producing Formation:** Permian limestone 1200 to 1500 ft, with production also from sand zone at 950 to 1150 ft. **Producing Area:** 18,900 acres. **Extent of Development:** Productive limits defined, with comparatively few undrilled inside locations due to use of 100-acre units for proration. **Deepest Test:** Field rules restricts drilling to 225-foot penetration of the lime zone. **Estimated Ultimate Recovery:** 675,000,000 bbls. **Production to 1937:** 223,313,347 bbls. **Indicated Remaining Reserve:** 451,686,653 bbls. **Daily Production July 1, 1937:** 26,085 bbls, 540 wells. **Potential:** 8,042,174 bbls, July 1, 1937. **Gravity:** 28-30. **Oil Outlets:** Illinois Pipe Line Co., Humble Pipe Line Co., Shell Pipe Line Co., Gulf Refining Co., Texas-New Mexico Pipe Line Co. **Rigs Running July 1, 1937:** 5. **Principal Leaseholders:** P. H. Broun, M. D. Bryant, Cardinal Oil Co., Continental Oil Co., Easter and West Texas Production Co., Easter-McCurdy, A. R. Eppenauer, Grayburg Oil Co., Gulf Oil Corp., Humble Oil and Refining Co., Kirby-Edson Petroleum Co., Clay Johnson, Ohio Oil Co., Midland Production Co., Muen Rio Oil Co., New State Oil Co., Pecos Production Co., Phillips Petroleum Co., Plymouth Oil Co., Savoy Oil Co., Shell Petroleum Corp., Skelly Oil Co., Standard Oil Co. of Texas, Stanolind Oil & Gas Co., Tide Water Associated Oil Co., West State Oil Corp. **Remarks:** Accumulative production total includes 231,245 barrels from the shallow sand and 3,472,159 barrels of seepage oil salvaged by 3 companies from "surface wells" and pits. Standard Oil Company of Texas' Bob Reid 3 is rated at 169,374 bbls daily, with a total depth of 1400 ft, and replaced Ohio Oil Company's Yates 30-A as the record producer for the district. Yates field was first prorated in Oct. 1927, after having produced 914,492 bbls of crude.

YATES (South)

Discovery Well: Texon Oil & Land Co.'s (was K. Kimberlin & Texon Oil & Land Co.) I. G. Yates 1, Cen Sec 55, Blk 1, I&GN Ry Sur, Feb 8, 1927. **Means of Discovery:** Geology. **Type Structure:** Unidentified. **Producing Formation:** Sandy lime from 1268 to 1273 ft. **Extent of Development:** Two oil producers completed but production was exhausted, and property now abandoned. **Deepest Test:** Operator's 2, CNW same section, was drilled to sulphur water at 1740 ft, PB for small flowing production. **Production to 1937:** 2157 bbls. **Gravity:** 29-30. **Oil Outlet:** See Yates. **Remarks:** Turned to independent group, 1936, and after they drilled a failure property was abandoned.

UNNAMED (Gas)

Discovery Well: R. D. Webb et al's Fee 1-A, near C SE SW 105, Blk "OW", July 28, 1929. **Means of Discovery:** Geology. **Type**

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Structure: Unknown. **Producing Formation:** Sands between 465 and 472 ft. **Producing Area:** Undefined. **Extent of Development:** Undeveloped. **Deepest Test:** Discovery. **Daily Production:** Following completion 3,500,000 cu ft. **Remarks:** Gas gauged 165 lbs RP, testing 1000 BTU.

UNNAMED (Gas)

Discovery Well: G. H. Anderson, Tower-McKanna Inc.'s University 1, near CSW NE NE 11, Blk 17, Jan. 20, 1929. **Means of Discovery:** Random drilling. **Type Structure:** Unknown. **Producing Formation:** Lime, 1960 to 1963 ft. **Producing Area:** Undefined. **Extent of Development:** This area not developed. **Remarks:** This area dormant at present, as no market available for gas production.

REAGAN COUNTY

BIG LAKE (Deep)

Discovery Well: Group One Oil Corp.'s University 1-B, NW NW SW 36, Blk 9, Dec. 12, 1928. **Means of Discovery:** Random drilling. **Type Structure:** Domal high. **Producing Formation:** Limestone strata in Ordovician, possibly including Hunton lime between 8100 and 8900 ft. **Producing Area:** Virtually defined at 1350 acres, except to the north. **Extent of Development:** Deep pay zone is completely developed as indicated by productive area. **Deepest Test:** To 9562 ft and abandoned by Big Lake Oil Co. after flowing more than 1,000,000 bbls oil at 8909 ft. **Estimated Ultimate Recovery:** 28,500,000 bbls, exclusive of Permian. **Production to 1937:** 24,529,042 bbls, exclusive of Permian. **Indicated Remaining Reserve:** 3,970,958 bbls. **Daily Production July 1, 1937:** Included with Big Lake Permian. **Gravity:** 40-66. **Oil Outlet:** Reagan County Crude Oil Purchasing Co. **Principal Leaseholders:** Big Lake Oil Co., Group One Oil Corp., Group Two Oil Corp. **Remarks:** Discovery of prolific oil and gas production from the Ordovician zone resulted in the drilling of numerous tests to the same horizon in other sections of the district. Total of 25 Ordovician wells were completed in Big Lake field, and 7 have been depleted and abandoned.

BIG LAKE (See Big Lake Shallow; Big Lake Deep)

Discovery Well: Big Lake Oil Co.'s (was Texon Oil & Land Co.) University 1, near CNE 2, Blk 2, May 28, 1923. **Means of Discovery:** Random drilling. **Type Structure:** Domal high. **Producing Formation:** Oolitic limestone of Permian age, 3000 ft. **Producing Area:** 3,200 acres. **Extent of Development:** Productive area established and apparently delimited by drilled wells. **Deepest Test:** See Big Lake (Deep). **Estimated Ultimate Recovery:** 72,000,000 bbls, exclusive of deep. **Production to 1937:** 60,436,051 bbls, exclusive of deep. **Indicated Remaining Reserve:** 11,563,949 bbls. **Daily Production July 1, 1937:** 7750 bbls; 214 wells and entire field. **Gravity:** 37-39. **Oil Outlet:** Reagan County Crude Oil Purchasing Co. **Principal Leaseholders:** Big Lake Oil Co., Group One Oil Corp., Group Two Oil Corp. **Remarks:** Production performance of this field greatly influenced revival of prospecting in the Permian basin, although its discovery was preceded by nominal production in the Westbrook field, Mitchell County. 274 producers completed in the Permian horizon, and 81 wells have been abandoned.

BIG LAKE (Shallow)
See also Big Lake and Big Lake (Deep)

Discovery Well: Big Lake Oil Co.'s University 17, near CNE Sec 1, Blk 2, completed in shallow pay at 2435 ft for 87,000,000 cu ft gas, Feb. 9, 1925. First oil producer same company's University 21, CNE NE 1, Blk 2, May, 28, 1925. **Means of Discovery:** Random drilling. **Type structure:** Domal high. **Producing Formation:** Laminated sandstone section in Red Beds of Permian age, 2400 to 2500 ft. **Producing Area:** 300 acres. **Extent of Development:** Shallow production area is defined. **Deepest Test:** See Big Lake (Deep). **Production to 1937:** Included with Big Lake field Permian. **Gravity:** 36-37. **Oil Outlet:** Reagan County Crude Oil Purchasing Co. **Principal Leaseholders:** Big Lake Oil Co., Group One Oil Corp., Group Two Oil Corp. **Remarks:** Gas in shallow pay tested sweet and high in gasoline content. Was soon exhausted.

DOBBS

Discovery Well: W. J. Dobbs et al's W. E. Friend 1, CN½ NW SW 3, William Allen Sur No. 3, July 9, 1935. **Means of Discovery:** Random drilling. **Type Structure:** Unidentified. **Producing Formation:** Permian 2325-2450 ft and plugged back from sulphur water at 2464 ft. **Gravity:** 28. **Rigs Running July 1, 1937:** 1. **Principal Leaseholders:** W. J. Dobbs et al, Empire Oil & Refining Co., Sun Oil Co., K. E. Sherman and O. B. Greathouse. **Remarks:** Discovery well failed to produce in commercial quantities and was abandoned in Sept. 1936, after pumping one tank of oil.

GRAYSON (Skelly-Utah)

Discovery Well: Skelly Oil Co.-Utah Southern's University 1, CSW SW SW 33, Blk 8, Feb. 6, 1928. **Means of Discovery:** Subsurface geology. **Type Structure:** Dome. **Producing Formation:** Permian limestone, 3135 to 3155 ft. **Producing Area:** 600 acres. **Deepest Test:** Same interest's University 1-D, CSW NW 33, topped Cisco 9174 ft, Simpson at 9400 and drilled to 9439 in shale and lime, Feb. 1935. No shows and well plugged back and completed at 3000 to 3100 ft. **Production to 1937:** 437,937 bbls. **Daily Production July 1, 1937:** 164 bbls, 5 wells. **Potential:** 446 bbls, July 1. **Gravity:** 31-32. **Oil Outlet:** Humble Pipe Line Co. **Principal Leaseholders:** Skelly Oil Co.-Utah Southern, Standard Oil Co. of Texas.

RUNNELS COUNTY

McMILLAN

Discovery Well: Vacuum Oil Co. et al's (was F. Yates, Lou

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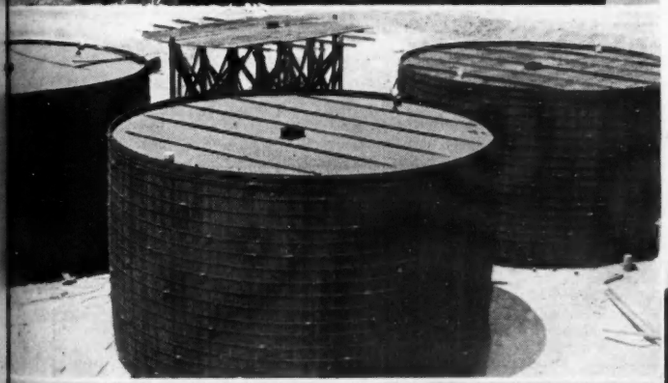

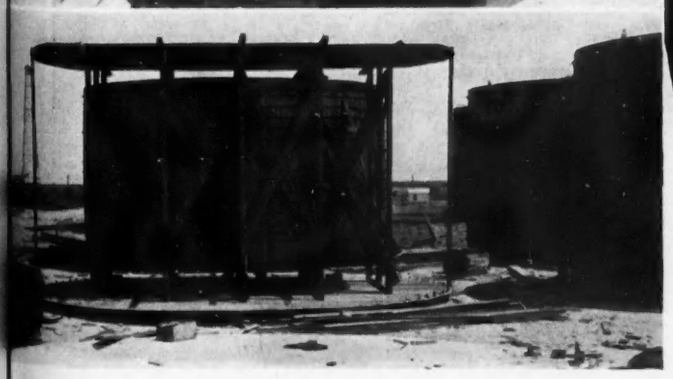

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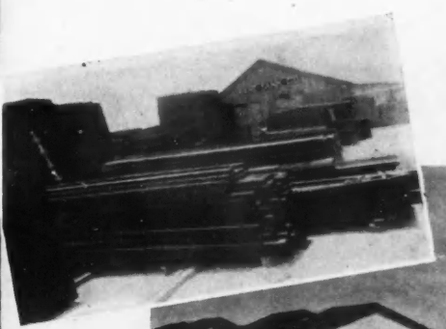

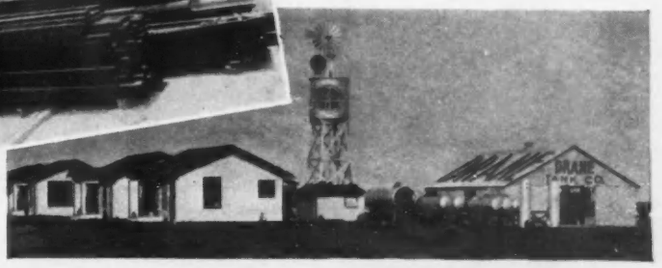

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Ladd, Ed. Hill et al) R. M. McMillan 1, near CE¼ E¼ Domingo Diaz Sur No. 532, Aug. 8, 1927. **Means of Discovery:** Surface geology. **Type Structure:** West plunging nose with flattening. **Producing Formation:** Cisco below Gunsite, 2535 to 2565 ft. **Producing Area:** Undefined. **Extent of Development:** Single well. **Production to 1937:** 860,000 bbls. **Daily Production July 1, 1937:** 177 bbls, 18 wells. **Potential:** All marginal producers. **Gravity:** 43-47. **Oil Outlet:** Star Light Refining Co. **Principal Leaseholders:** Agnew Oil Co., Golden Petroleum Co., Mann Currie Neal, Inc., Hightower Oil & Refining Co., Tucker. **Remarks:** Producing strata was depleted and the well abandoned early in 1930.

UNNAMED (Gas)

Discovery Well: Roberts Oil Corp.'s (was Robt. Watchorn O&G Co. et al) J. L. King 1, J. L. King tract in G. W. Dyer Sur, May 2, 1928. **Means of Discovery:** Surface geology. **Producing Formation:** Unidentified, 3475 and 3485 ft. **Extent of Development:** Single well. After producing for some time volume decreased indicating depletion of reservoir and well was plugged. **Deepest Test:** Discovery, 3732 ft. **Remarks:** Production from this wildcat gasser was marketed in San Angelo until well became exhausted, April, 1934.

SCHLEICHER COUNTY

UNNAMED (Gas and Distillate)

Discovery Well: John M. Cooper et al's Bert Page 1, near C NW¼ Sec 40, blk L, GH&SA Ry Sur, Oct. 15, 1935. **Means of Discovery:** Subsurface geology. **Type Structure:** Unknown. **Producing Formation:** Bend lime series, 5390 to 5550 ft. **Producing Area:** Undefined. **Extent of Development:** Single well. **Deepest Test:** Discovery well was carried to 6257 ft in Ordovician and was plugged back to Bend lime where it was productive after shot and acid. Gas volume estimated at 13,800,000 cu ft carrying distillate. **Gravity:** 57. **Oil Outlet:** None (well shut in). Minor production disposed of by trucks to local markets. **Rigs Running July 1, 1937:** 2. **Principal Leaseholders:** John M. Cooper et al, Tex Tor Oil Corp.

SCURRY COUNTY

NORTHWEST (Ira)

Discovery Well: Coffield & Guthrie, Inc.'s (was The Northwest Co. and previously the Loutex Corp.) J. J. Moore 1, near CSW NW 116, Blk 97, H&TC Ry Sur, Nov. 29, 1923. **Means of Discovery:** Surface geology. **Type Structure:** Anticlinal high. **Producing Formation:** Permian lime and shale breaks 1750 to 1880 ft; Permian lime 3480 to 3500 ft. **Extent of Development:** Doubtfully defined as productive areas are spotted in occurrence. **Deepest Test:** Discovery was originally carried to 3576 ft where it was dry. Plugged back to indicated saturation between 1765 and 1820 ft. **Production to Jan. 1, 1937:** 145,000 bbls. **Daily Production July 1, 1937:** 24 bbls, 9 wells. **Potential:** All marginal producers. **Gravity:** 28-29. **Oil Outlet:** Col-Tex Refining Co. **Rigs Running July 1, 1937:** 3. **Principal Leaseholders:** Coffield & Guthrie, Inc., Darby Petroleum Corp., E. L. Goos et al. Jas. H. Beall, Jr. **Remarks:** Production is scattered over a comparatively wide area, but involves small crude yield per well. Within recent years majors have acquired substantial long term lease blocks on the strength of Ordovician production possibilities.

STERLING COUNTY

CLARK

Discovery Well: H. D. Rummel & Kanawah-Angelo Oil Co.'s L. T. Clark 3, CE½ NEc 8, Blk "A," GC&SF Ry Sur, 1926. **Means of Discovery:** Geology. **Type Structure:** Unidentified. **Producing Formation:** Lime, 1173 to 1175 ft. **Producing Area:** Considered limited. **Extent of Development:** Producer preceded by two failures. Later development resulted in light pumper but not considered commercial and properties abandoned. **Gravity:** 30.

TAYLOR COUNTY

TYE

Discovery Well: J. B. Dunigan, Fred Hyer et al's T. A. French-Hunter 1, 2811 ft from NEc S½, W. R. Willis Sur, 122. Oct. 10, 1929. **Means of Discovery:** Random drilling. **Type Structure:** Nosing anticline. **Producing Formation:** Cisco sandy lime 2389 to 2391 ft. **Producing Area:** 200 acres. **Extent of Development:** Partially defined. **Production to 1937:** 230,000 bbls, including outlying pools. **Daily Production July 1, 1937:** 51 bbls, 5 wells. **Potential:** All marginal producers. **Gravity:** 39-40. **Oil Outlet:** Tank trucks. **Principal Leaseholders:** Dunigan Bros. and Fred Hyer, Eastland Oil Co., W. J. Rhodes.

UNNAMED

Discovery Well: Laurel Dunn & Herman McAlister's Minnie Bowles Est. 1, near CSW SW SW¼ 28, Blind Asylum Lands, April 27, 1937. **Means of Discovery:** Random drilling. **Type Structure:** Anticlinal nosing with closure. **Producing Formation:** Pennsylvanian sandy lime, 1750 to 1752 ft. **Producing Area:** Unknown. **Extent of Development:** Undeveloped. **Gravity:** 37-39. **Remarks:** This production, 5½ miles NE of Abilene, near Callahan County line, was estimated at five barrels per day, crude being comparatively high gravity, green.

TERRELL COUNTY

UNNAMED

Discovery Well: Ohio Oil Co.'s (was Transcontinental Oil Co.) M. H. Goode 1, near SW SW SE Sec. 26, Blk. 161, GC&SF Ry. Sur., completed originally Apr. 1, 1931, and dd and abd Mar. 8, 1937. **Means of Discovery:** Surface geology. **Producing Formation:** Pennsylvanian. **Producing Area:** Unknown. **Extent of Development:** Single well. Gas estimated at 6,250,000 cu. ft. was encountered in Pennsylvanian between 5606 and 5612 ft. **Remarks:** This deep test abd in black shale at 9140 ft., found thickest section of Permian ever drilled in the area. No market available for gas.

UPTON COUNTY

HURDLE

Discovery Well: F. W. Merrick Inc.'s (was Brewer-Smith Inc.) Cordova Union Oil Corp. 1, C SE NE NW 19, Blk. 1, MK&T Ry. Sur., June 12, 1936. **Means of Discovery:** Trend drilling. **Type Structure:** Anticline. **Producing Formation:** Permian lime between 2070 and 2072 ft. **Producing Area:** Estimated 160 acres. **Production to 1937:** 14,369 bbls. **Daily Production July 1, 1937:** 384 bbls., 12 wells. **Potential:** July 1, 2647 bbls. **Gravity:** 24-27. **Oil Outlet:** Shell Pipe Line Corp. **Rigs Running July 1, 1937:** 2. **Principal Leaseholders:** F. W. Merrick Inc. and Cordova Union Oil Corp. **Remarks:** Area is related to the McCamey district, although isolated from same by failures.

McCAMEY*

Discovery Well: Republic Production Co.'s (was J. P. Johnson, Geo. B. McCamey and Marland Oil Co.) M. L. Baker 1, near NEc W½ N½ Sec. 8, Sept. 30, 1925. **Means of Discovery:** Surface geology. **Type Structure:** Anticline. **Producing Formation:** Permian limestone, 2100 to 2250 ft. **Producing Area:** 12,000 acres. **Estimated Ultimate Recovery:** 60,000,000 bbls. **Production to 1937:** 31,196,631 bbls. **Indicated Remaining Reserve:** 28,803,369 bbls. **Daily Production July 1, 1937:** 14,098 bbls, 635 wells. **Potential:** 201,071 bbls, July 1. **Gravity:** 26-30. **Oil Outlet:** Humble Pipe Line Co., Shell Pipe Line Corp. **Rigs Running July 1, 1937:** 33. **Principal Leaseholders:** Amerada Pet. Corp., Amtex Pet. Corp., Arnold Oil Co., Basin Oil Properties, Black-Cass-Hanna, British Amer. Oil Prod. Co., M. D. Bryant, Cardinal Oil Co., Continental Oil Co., J. W. Ellis, Enniscrane Prod. Co., A. R. Eppenauer, Geo. E. Farley, Gulf Oil Corp., Homestead O. & G. Co., Humble O. & R. Co., Magnolia Pet. Co., J. W. Perry, Republic Prod. Co., Shell Pet. Corp., Sinclair Prairie Oil Co., Smith-Craven, Snowden-McSweeney, Stanolind Oil & Gas Co., Sun Oil Co., Texas Consolidated, The Texas Co., T. P. Coal & Oil Co., Bert Fields, Storey, Friebele, Superior Oil Co.

WEB-RAY

Discovery Well: Web-Ray Oil Co.'s Cordova Union 1, 2518 ft. west and 17½ ft. north of NWc GC&SF Ry., Sec. 8, but in Sec. 3, A. E. Baxley Sur., Blk. "AB," 2⅛ miles southeast of nearest production. **Means of Discovery:** Subsurface geology. **Type Structure:** Anticline. **Producing Formation:** Permian (Blaine) limestone 2061-2125 ft. **Producing Area:** 80 acres, but may expand to 300 acres. **Extent of Development:** 2 completions. **Deepest Test:** 2176-ft producer. **Estimated Ultimate Recovery:** 7500 bbls per acre. **Production to 1937:** 14,000 bbls. **Daily Production July 1, 1937:** 22 bbls, 2 wells. **Potential:** Marginal wells. **Gravity:** 26-27 degrees. **Oil Outlet:** Shell Pipe Line Corp. **Rigs Running July 1, 1937:** 1. **Principal Leaseholders:** Web-Ray Oil Co., Indian Territory Illuminating Oil Co. **Remarks:** Discovery company plans to complete 3 or more wells in 1937.

UNNAMED

Discovery Well: Basin Oil Properties, Inc.'s (was R. H. Henderson et al) A. J. Herrington 1, SE Sec. 4, Blk. 3½, CCSDRG&NG Sur., May 19, 1937. **Means of Discovery:** Subsurface trend location, 2½ miles north of production in McCamey district. **Type Structure:** Anticlinal high. **Producing Formation:** Permian lime at 2815 to 2828 ft. **Producing Area:** Single well. **Daily Production July 1, 1937:** 100 bbls., 1 well. **Potential:** 526 bbls., July 1. **Gravity:** 24. **Oil Outlet:** Humble Pipe Line Co. **Principal Leaseholders:** Standard Oil Co. of Texas, Gulf Oil Corp., Shell Petroleum Corp., The Texas Co. **Remarks:** This semi-wildcat, 2½ miles north of nearest production is situated close to the axis of a broad, NW plunging anticline, and may indicate the existence of a parallel trend of production east of present producing fields.

VAL VERDE COUNTY

UNNAMED (Gas)

Discovery Well: O. O. Owens et al's H. Y. J. Mills 1, CNL SW SE 128, Blk. 1, I&GN Ry. Sur., June 29, 1927. **Means of Discovery:** Surface Geology. **Producing Formation:** Sandy lime, 2491 to 2520 ft. **Deepest Test:** H. Y. J. Mills 1, 6780 ft, Igneous rock. **Remarks:** Discovery completed in gas pay for 3,000,000 cubic feet.

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WARD COUNTY

BENNETT (Now South Ward)

Discovery Well: Penn Oil Co.-Atlantic Ref. Co.'s J. B. Bennett 1, 330 ft from Nc S¼ 16, Blk. 34, H&TC Sur., Sept. 28, 1929. **Means of Discovery:** Subsurface geology. **Type Structure:** Monocline accumulation. **Producing Formation:** Sandy lime from 2300 to 2600 ft. **Producing Area:** Included with South Ward. **Extent of Development:** Gradual development of this area proved it to be closely related to other producing fields in the south part of the county. **Production to 1937:** Included with South Ward. **Gravity:** 36 degrees. **Oil Outlet:** Atlantic Pipe Line Co., Wickett Pipe Line Co.

DOBBS (See South Ward)

Discovery Well: Housel Oil Corporation (was Dobbs Oil Co.'s) A. F. Bray-Gulf 1, 1650 ft from SW and 2310 ft from SE lines 14, Blk 5, H&TC Ry. Sur., Jan. 8, 1936. **Means of Discovery:** Subsurface Geology: **Type Structure:** Minor high on anticlinal trend. **Producing Formation:** Lime from 2550 to 2563 ft. **Producing Area:** 80 acres. **Extent of Development:** This pool is related to South Ward, and contains two producers with failures to the north, south and west thereby defining productive area. **Production to 1937:** 4225 bbls. **Daily Production July 1, 1937:** 16 bbls., two wells. **Potential:** 16 bbls. **Gravity:** 37.3 degrees. **Oil Outlet:** Atlantic Pipe Line Company. **Rigs Running July 1, 1937:** None. **Principal Leaseholders:** W. J. Dobbs, W. E. Housel.

ESTES (South Ward)

Discovery Well: Tide Water Associated Oil Co.'s (was Simms Oil Company's) W. D. Johnson 1, 330 ft out of the most easterly corner H&TC Ry., Section 28, Blk. 34, June 23, 1934. **Means of Discovery:** Trend drilling. **Type Structure:** Monoclinal accumulation. **Producing Formation:** Permian sand and sandy-lime, varying from 2500 to 2950 ft. **Producing Area:** 2400 acres. **Extent of Development:** East to west trend of production to attain maximum width of about 3 miles, while north and south trend for upper pay definitely linked with Gulf-O'Brien-North Ward and South Ward, respectively. **Estimated Ultimate Recovery:** 28,800,000 bbls. **Production to 1937:** 495,600 bbls. **Indicated Remaining Reserve:** 28,304,400 bbls. **Daily Production July 1, 1937:** 7650 bbls; 157 wells. **Potential:** 395,326 bbls, July 1, 1937. **Gravity:** 34-37 degrees. **Oil Outlet:** Gulf Refining Co., Atlantic Pipe Pipe Line Co. and Texas-New Mexico Pipe Line Co. **Rigs Running July 1, 1937:** 16. **Principal Leaseholders:** Eastland Oil Co., F. H. E. Oil Co. et al, General Crude Oil Co., Gulf Oil Corp., Humble Oil & Ref. Co., Oil States Exploration Co., Richardson Oils, Inc., Skelly Oil Co., Standard Oil Co. of Texas, Stanolind O&G Co., Sun Oil, Tide Water Associated Oil Co. and West Texas Oil & Royalty Co. **Remarks:** The Estes area is given a separate listing for proration purposes, although the upper pay is a continuation of development to the north from the South Ward district. Recent outpost completions to the north of Estes area likewise reveal that the upper pay is linked with the regular producing zone in the Gulf-O'Brien or North Ward district. Development of production from the lower strata in Estes area distinguishes it from adjacent fields. The latter are also expected to produce from the second pay level.

GRAND FALLS (Now South Ward)

Discovery Well: Alpine Oil & Dev. Co.'s J. E. Boogher 1, 2456 ft from NW and 854 ft from most westerly SW line 11, Blk. 5, H&TC Ry. Sur., Oct. 14, 1929. **Means of Discovery:** Random drilling. **Type Structure:** Stratigraphic accumulation due to change in porosity. **Producing Formation:** Sand and sandy lime varying from 2200 to 2500 ft. **Producing Area:** Included with South Ward. **Extent of Development:** Productive area being expanded to south and southwest by nominal sized producers. Although developed as an individual pool, this area was later included in the present South Ward field. **Production to 1937:** Included with South Ward. **Daily Production July 1, 1937** Included with South Ward. **Gravity:** 34-35 degrees. **Oil Outlet:** Atlantic Pipe Line Co., Wickett Pipe Line Co.

GULF-O'BRIEN (North Ward)

Discovery Well: Gulf Oil Corp.'s G. W. O'Brien 4, CNW SW Sec. 19, Blk. "F", G&MMA Sur., April 12, 1929. **Means of Discovery:** Geology. **Type Structure:** Monoclinal accumulation. **Producing Formation:** Permian sandy-lime and sand, varying from 2500 to 3100 ft. **Producing Area:** 5000 acres, exclusive of virtually proved undrilled portion. **Extent of Development:** Gulf Oil Corp. controls all productive acreage, except 7 leases on the east edge of the north sector, and University tracts adjoining the south sector on the west. Former is maintaining continuous development program, having drilled twin-row of wells adjacent to outside leases and where O'Brien and Hutchings leases adjoin. **Estimated Ultimate Recovery:** 50,000,000 bbls., represents drilled acreage. **Production to 1937:** 11,420,000 bbls. **Indicated Remaining Reserves:** 38,580,000 bbls. **Daily Production July 1, 1937:** 7393 bbls, 215 wells. **Potential:** 123,625 bbls., July 1, 1937. **Gravity** 32-36 degrees. **Oil Outlet:** Gulf Refining Co., Atlantic Pipe Line Co., Texas-New Mexico Pipe Line Co. **Rigs Running July 1, 1937:** 11. **Principal Leaseholders:** Harry Adams, Hitchcock & Bradley, Atlantic Ref. Co. et al., Empire Oil & Ref. Co., A. R. Eppenauer Drlg. Co., Gulf Oil Corp., Humble Oil & Ref. Co., Magnolia Pet. Co., Richardson Oils, Inc., Sinclair Prairie Oil Co. and West Texas Oil & Royalty Co. **Remarks:*** Includes Sealy area, Winkler County, which established the north limits of the Gulf-O'Brien production, and separated only for proration purposes. This sandy-lime producing belt, with a maximum width of about 2 miles, extends in a general southeast direction across Gulf Oil Corp.'s large block of leases on the G. W. O'Brien and Hutchings Stock Association lands, which have been sparsely de-

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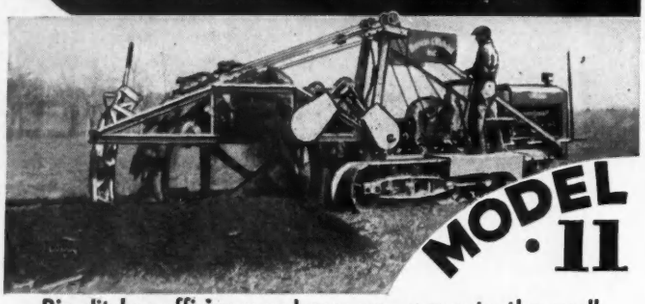

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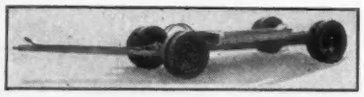

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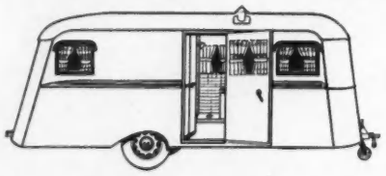

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veloped, via University of Texas' fee lands to the Estes field, an overall distance of about 14 miles.

KUGLE (Now South Ward)

Discovery Well: J. G. Kugle et al's Chas. Wallis 1, 330 ft from SE and 1263 ft from SW lines, Sec. 19, Blk. 34, H&TC Ry. Sur., Feb. 12, 1931. **Means of Discovery:** Trend location. **Type Structure:** Monocline. **Producing Formation:** Sandy lime between 2450 and 2500 ft. **Producing Area:** Included with South Ward. **Extent of Development:** Due to erratic production from completed wells, extensive development is not predicted. **Deepest Test:** Discovery, 2645 ft. **Production to 1937:** Included with South Ward. **Gravity:** 34-36 degrees. **Oil Outlet:** Atlantic Pipe Line Co.

MONROE (Barstow)

Discovery Well: Plains Production Co. et al's (was Shipley Oil Corp.-D. H. Byrd & H. A. Harmon's) Lee Monroe 1-A, 220 ft from W cor 3, Blk. 1, W&NW Ry. Sur., Nov. 21, 1931. **Means of Discovery:** Surface Geology. **Type Structure:** Fold in Delaware sand horizon. **Producing Formation:** Delaware sand, 4663 to 4673 ft. **Producing Area:** 40 acres, with one well. **Estimated Ultimate Recovery:** 200,000 bbls, or 5000 bbls per acre. **Production to 1937:** 75,000 bbls. (estimated). **Indicated Remaining Reserve:** 125,000 bbls. **Daily Production July 1, 1937:** 25 bbls., 1 well. **Potential:** Marginal well. **Gravity:** 29 degrees. **Oil Outlet:** Tank trucks. **Rigs Running July 1, 1937:** None. **Principal Leaseholders:** Plains Production Co. et al, Motex Oil Co., Robert Violett et al, and L. F. White et al. **Remarks:** Owner reports original well continues to flow about the same as its initial yield. Five later tests drilled around this isolated producer failed to register commercial production.

PRAIRIE-SEALY

Discovery Well: Sinclair Prairie Oil Co.'s (was Prairie Oil & Gas Co.'s) John Sealy 1, CSW 95, Blk "A" GMMB&A Sur, Feb. 2, 1929. **Means of Discovery:** Geology. **Producing Formation:** Sandy lime 2100 to 2700 ft. **Extent of Development:** John Sealy 1 is the discovery gas well of the presently developed North Ward, although it is isolated from oil production since developed to north and southwest. **Deepest Test:** Discovery carried to 3505 ft, and PB from flowing sulphur water. **Gas Outlet:** Southern Union Gas Co. purchased gas for several years, but well is shut in at present.

SEALY-MAGNOLIA

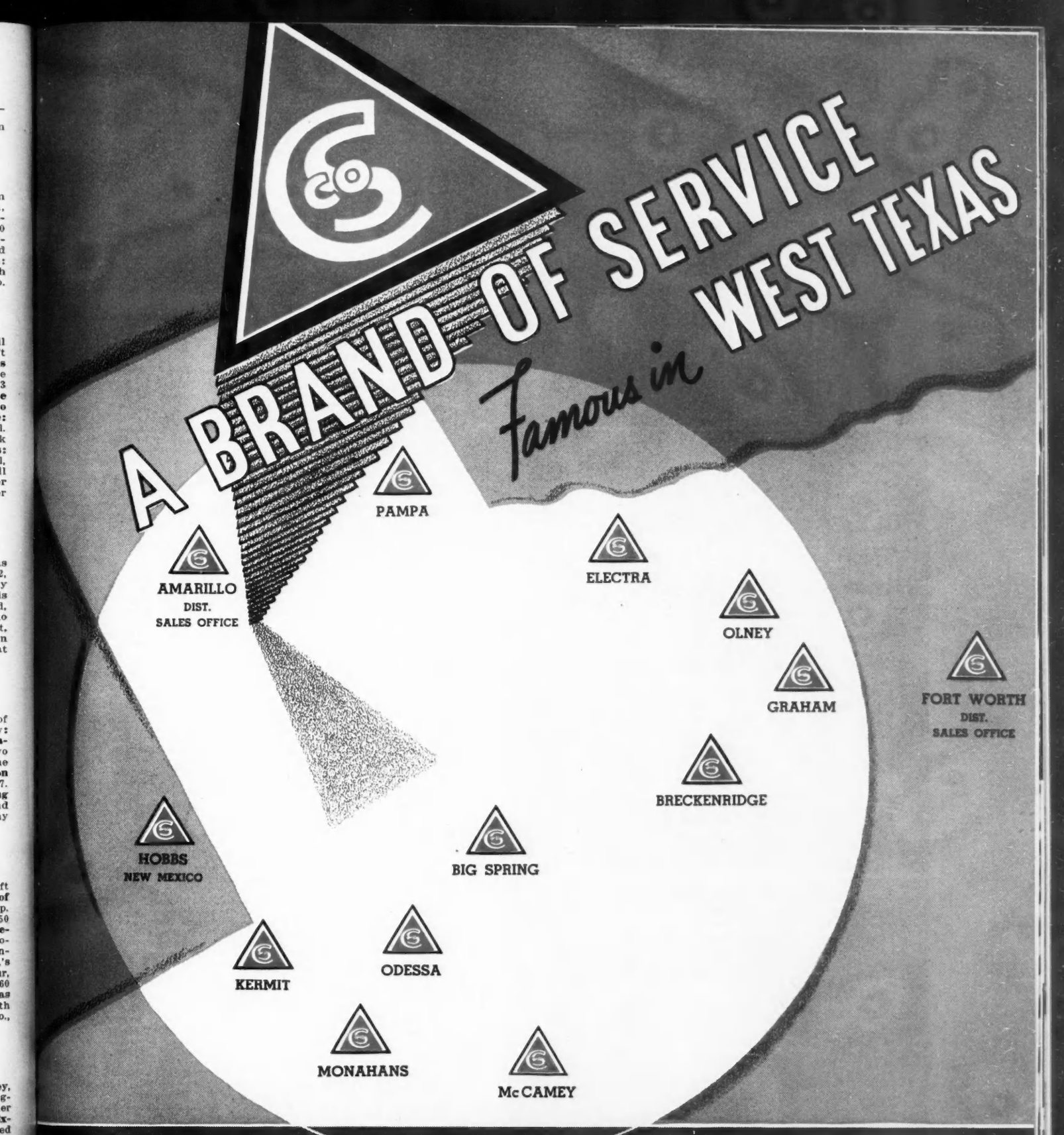
Discovery Well: Magnolia Pet. Co.'s Geo. Sealy 1, SE SE NW of GMMB&A Sec 46, Blk F, Nov. 24, 1930. **Means of Discovery:** Random drilling. **Type Structure:** Anticline. **Producing Formation:** Permian limestone at 3036-3065 ft. **Producing Area:** Two isolated producers. **Extent of Development:** Sparsely explored, one failure in area. **Production to 1937:** 15,645 bbls. **Daily Production July 1, 1937:** 43 bbls, 2 wells. **Potential:** 156 bbls, July 1, 1937. **Gravity:** 28-29. **Oil Outlet:** Atlantic Pipe Line Co. **Rigs Running July 1, 1937:** 1. **Principal Leaseholders:** Magnolia Pet. Co., and A. W. Cherry & D. J. Finley et al. **Remarks:** Discovery company holds lease on solid block of 24 sections.

SHIPLEY (Now South Ward)

Discovery Well: Shipley Oil Corp.'s S. F. Hayzlett 1, 2310 ft NW&SW of E. cor 17, Blk 5, H&TC Sur, Nov. 2, 1928. **Means of Discovery:** Random drilling. **Type Structure:** Monoclinal trap. **Producing Formation:** Sand, sandy lime and lime 2100 to 2950 ft. **Producing Area:** Included with South Ward. **Extent of Development:** Discovery well proved to be on the east edge of producing area. Present drilling activity is proceeding along a general northwest-southeast trend. **Deepest Test:** Gulf Oil Corp.'s E. W. Estes 1, 330 ft from NE&SE lines 38, Blk 34, H&TC Sur, completed 9-3-36, proved the deep pay by mudding off gas at 2460 and obtaining initial of 535 bbls 35 gravity at 2951. This was area's first deeper producer. **Production to 1937:** Included with South Ward. **Gravity:** 35-36. **Oil Outlets:** Atlantic Pipe Line Co., Wickett Pipe Line Co.

SOUTH WARD DISTRICT

Discovery Well: Embraces what is commonly called the Shipley, Grand Falls, Kugle and Bennett areas. The former was the original discovery and was followed by the Grand Falls and later the Bennett and Kugle areas. **Producing Area:** 9600 acres. **Extent of Development:** District affords an abundance of proved locations that assure a prolonged development program. Dry holes and thin pay sections have partially defined each of the areas comprising this district. **Estimated Ultimate Recovery:** 57,600,000 bbls. **Production to 1937:** 14,410,000 bbls. **Indicated Remaining Reserve:** 43,190,000 bbls. **Daily Production July 1, 1937:** 18,056 bbls, 701 wells. **Potential:** 325,593 bbls, July 1. **Rigs Running July 1, 1937:** 35. **Principal Leaseholders:** Abell Bros., Acme Oil & Royalty Co., Agnew et al, Arnold Oil Co., Atlantic Ref. Co., G. D. Beall, W. A. Black & Sons, Bolin & Lindsay, Bond Oil Corporation, Ella Buffington, W. G. Choate, Aaron Cohen, Cook Drilling Co., Eastland Oil Co., Empire Oil & Ref. Co., A. R. Eppenauer, Eubank & Peck, FHE Oil Co., Farrell & Co., J. J. Gibson, L. C. Harrison, Hedrick & Black, Hill- Pattrick et al, Humble Oil & Ref. Co., Illinois Oil Co., Charles Kolp, Landreth Production Corp., N. T. Lawson, W. P. Luse, A. E. Lynch, Magnolia Pet. Co., J. C. Maxwell, Messenger & Jackson, Mid-Continent Pet. Corp., P. J. Moran, Prince Bros. Drilling Co., E. B & L. J. Prince, Reno Oil Co., Republic Production Co., Richardson Oils, Inc., Rio Bravo Oil Co., S. J. Rixford, Sinclair Prairie Oil Co., Skelly Oil Co., L. R. Pearson, Mrs. F. Smith, Standard Oil Co. of Texas, Stanolind O & G Co., Tex Mex Pet. Corp., S. A.



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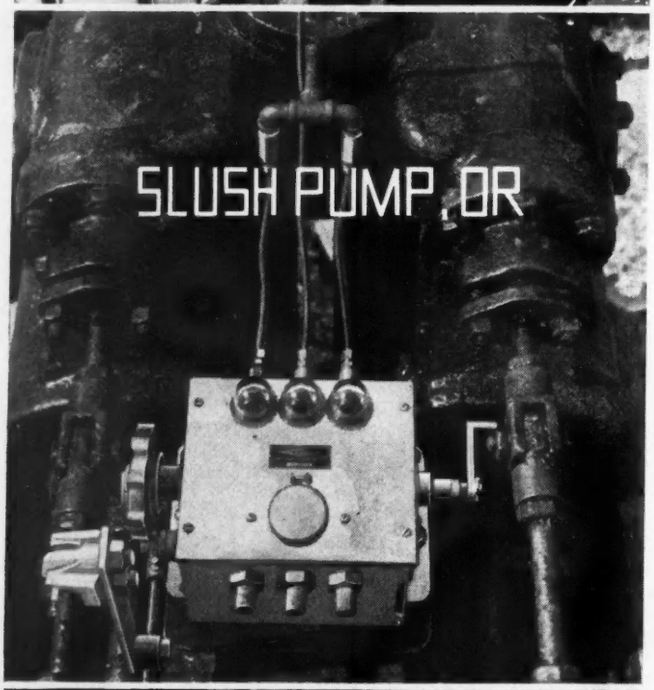

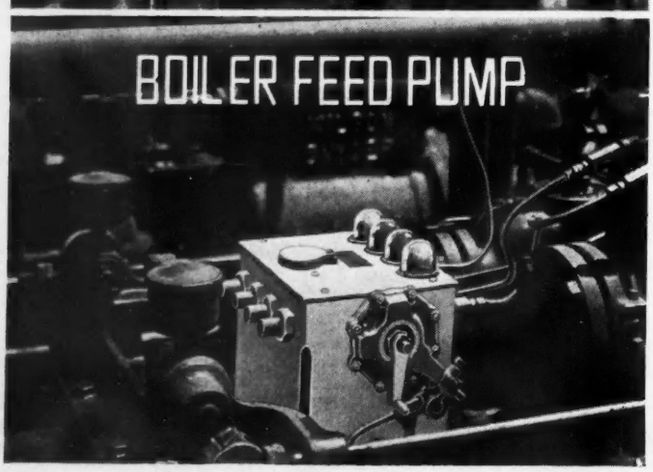

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UNNAMED

Discovery Well: C. H. Mahres, Kenneth Slack et al's Pat Wilson 1, 330 ft from SW and 1650 ft from SE lines H&TC Ry Sec 133, Blk 34, in process of completion. **Means of Discovery:** Random drilling. **Type Structure:** Unidentified. **Producing Formation:** Delaware Mountain lime and sand 5083-5085 ft. **Extent of Development:** Oil possibilities in Delaware for this area previously revealed by Tex.Oil Prod. Co.-E. B. Lovelace's Redman 1, located about 3½ miles northwest, as it showed oil and gas before being abandoned at 5077 ft. **Gravity:** 38-39. **Remarks:** This well is in the process of completion and is indicated to be a commercial producer.

WINKLER COUNTY

BASHARA

Discovery Well: M. J. Bashara et al's Fee 1, CNE SE SW 17, Blk B-3, PSL Sur, May 5, 1929. **Means of Discovery:** Random drilling. **Type Structure:** Minor anticlinal accumulation. **Producing Formation:** Broken sand and lime between 2481 and 2483 ft. Initial production gauged at 19,400,000 cubic ft of gas. Discovery well later converted into small oil producer. **Producing Area:** 80 acres. **Extent of Development:** Partially defined by dry holes and gas wells. **Production to 1937:** Consolidated with Kermit. **Daily Production July 1, 1937:** 19 bbls, 3 wells. **Potential:** Marginal wells. **Gravity:** 34-35. **Oil Outlet:** Humble Pipe Line Co. **Rigs Running July 1, 1937:** None. **Principal Leaseholders:** Bashara & Sons, Southern, Thurman, Wilgo Oil Corp.

BOLIN (Now Kermit)

Discovery Well: T. J. Jeffries et al's (was V. T. Bolin's) Brown-Altman 1, near SE SE NW Sec 4, Blk B-5, PSL Sur, July 19, 1928. **Means of Discovery:** Random drilling. **Type Structure:** Shore line sedimentation. **Producing Formation:** Sandy lime from 2700 to 2900 ft. **Extent of Development:** Although the production of this well never attained important proportions, it served to definitely establish the possibility of production from the sandy lime belt paralleling Hendrick field to the east. **Production to 1937:** Included with Kermit. **Gravity:** 36-37.

BROWN-ALTMAN (Now Kermit)

Discovery Well: J. O. Fox, W. E. Butler & T. J. Jefferies' Brown-Altman 1, NEc N½ SW PSL Sec 6, Blk B-5, March 9, 1935. **Means of Discovery:** Trend. **Type Structure:** Anticlinal accumulation. **Producing Formation:** Permian sandy-lime 3100-3200 ft. **Producing Area:** Incorporated with Kermit. **Production to 1937:** Included with Kermit. **Gravity:** 34-36. **Remarks:** Original completion was about 1½ miles east of dolomite and sandy-lime production on east flank of Hendrick field. Area was designated as Brown-Altman field for proration purposes, and later consolidated with Sayre and Keyes to become Kermit field on proration listing, as all three sectors are related.

EMPEROR

Discovery Well: Emperor Oil Co.'s S. M. Halley 1, CSE NE SE 12, Blk B-12, PSL Sur, Nov. 14, 1935. **Means of Discovery:** Trend drilling. **Type Structure:** Flanking sedimentation. **Producing Formation:** Sandy lime from 2800 to 2900 ft, with gas from 2600 to 2700 ft. **Producing Area:** 1200 acres. **Extent of Development:** Field is in the early stage of development with production following the general north-south trend and undoubtedly will be linked with Halley to the South, and there is a possibility of its being extended north to tie in with Greater Kermit field. **Estimated Ultimate Recovery:** 9,200,000 bbls. **Production to 1937:** 313,085 bbls. **Indicated Remaining Reserve:** 8,886,915 bbls. **Daily Production July 1, 1937:** 1184 bbls, 37 wells. **Potential:** 18,921 bbls, July 1. **Gravity:** 32-34. **Oil Outlets:** Shell Pipe Line Corp., Humble Pipe Line Corp. **Rigs Running July 1, 1937:** 4. **Principal Leaseholders:** Emperor Oil Co., F. W. Estill, Bert Fields, Phillips Petroleum Co., Skelly Oil Co., Texas Pacific Coal & Oil Co., The Texas-Co., Weaver, Hoffman & Paige, R. A. Westbrook.

HALLEY

Discovery Well: Skelly Oil Co.'s S. M. Halley 1, 2200 ft from NEc 25, Blk 11, PSL Sur, Oct. 18, 1934. **Means of Discovery:** Trend drilling. **Type Structure:** Shore line sedimentation. **Producing Formation:** Sandy lime from 2735 to 3150 ft. **Producing Area:** 950 acres, not yet limited by development. **Extent of Development:** Field is not delimited by edge wells, and has proven inside locations to be drilled. **Estimated Ultimate Recovery:** 5,045,000 bbls. **Production to 1937:** 140,295 bbls. **Indicated Remaining Reserve:** 4,904,705 bbls. **Daily Production July 1, 1937:** 544 bbls, 17 wells. **Potential:** 6389 bbls, July 1. **Gravity:** 31-32. **Oil Outlets:** Shell Pipe Line Corp., Magnolia Pipe Line Co. **Rigs Running July 1, 1937:** 3. **Principal Leaseholders:** Eastland Oil Co., S. W. Richardson, Skelly Oil Co., Sun Oil Co.

HENDERSON

Discovery Well: Uscan Oil Co., et al's (was R. H. Henderson et al's) J. B. Walton-Humble 1-A, NE NE Sec 9, Blk 26, PSL Sur, April 6, 1936. **Means of Discovery:** Trend drilling. **Type Structure:** Anticline. **Producing Formation:** Dolomite from 3000 to 3100 ft. **Producing Area:** 1500 acres. **Extent of Development:** Shown to be relatively narrow east and west. Northern limit apparently established. South trend of production toward Hendrick field open for important extensions. **Estimated Ultimate Recovery:** 18,000,000 bbls. **Production to 1937:** 191,441 bbls. **Indicated Remaining Reserve:** 17,808,559 bbls. **Daily Production July 1, 1937:** 3890 bbls, 78 wells. **Potential:** 144,820 bbls, July 1.

FACTS

The following appeared in an ad on Page 9 of The Oil Weekly of May 17, 1937:

"The highest court in the land had issued its verdict on formation testers. U. S. Patents on the Johnston Tool have been declared valid. Thus is this tool, the ORIGINAL FORMATION TESTER, once and for all time, fully protected by Patents 1,709,940 . . . 1,715,504 . . . 1,790,424 . . . 1,842,270 . . . 1,901,813 . . . and other patents pending."

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FIRST . . . The letters patent mentioned in the advertisement as being held valid were not in controversy in the case in question or in any other court and have never been found valid or infringed.

SECOND . . . The ad states that the Johnston Tool is the "ORIGINAL FORMATION TESTER." In the spring of 1926 Halliburton introduced to the oil industry the method which is being used to make formation tests. The patent application was filed February 10, 1926. To overcome a general feeling in the industry that a testing device would stick in a well because there was no circulation while a test was being made, many free tests were made to prove that a tester would not stick. Formation testing was thereby proven practical and accepted by the industry. Johnston applied for patent March 22, 1927.

THIRD . . . Other statements in the advertisement would make it appear that no one else uses a valve for equalizing the pressure above and below the packer when the packer and testing device are being removed from the well, also that no one else uses a recording pressure device for recording pressures while making a test. Halliburton testers use an equalizing valve and a recording pressure bomb.

* * * *

This statement is submitted for the purpose of clarification

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Gravity: 36. **Oil Outlets:** Humble Pipe Line Co., Atlantic Pipe Line Co. **Rigs Running July 1, 1937:** 6. **Principal Leaseholders:** Atlantic Ref. Co., Champlin & Bass, Inc., Emperor Oil Co., Empire Oil & Ref. Co., R. H. Henderson, Humble Oil & Ref. Co., J. C. Maxwell, Sinclair Prairie Oil Co., Southern Royalty Co., Uscan Oil Co., Wahlenmaier Pet. Corp. **Remarks:** The most prolific section of the producing stratum of this field is close to the water table.

HENDRICK

Discovery Well: Stanolind O & G Co.-Westbrook-Thompson Holding Corp.'s (was R. A. Westbrook & Co.'s) T. G. Hendrick 1-A-T-67, Sec 42, Blk B-5, PSL Sur, Nov. 8, 1936. **Means of Discovery:** Random drilling. **Type Structure:** Structural high in Big Lime. **Producing Formation:** Two major sections of the Big Lime, Permian age, the White and the Brown sections, are productive between 2800 and 3100 ft. **Producing Area:** 9800 acres. **Extent of Development:** Field is considered delimited. **Deepest Test:** Stanolind O&G Co. et al's Hendrick T-67-3-B-1, SWc PSL Section 33, Blk 26, deepened from regular oil zone, after producing more than 100,000 bbls. oil, to 3962 feet, where 5 3/16-inch pipe was cemented and work stopped without drilling plugs. **Estimated Ultimate Recovery:** 196,000,000 bbls. **Production to 1937:** 184,919,656 bbls. **Indicated Remaining Reserve:** 11,080,344 bbls. **Daily Production July 1, 1937:** 12,243 bbls, 389 wells. **Potential:** 15,612 bbls, July 1, 1937. **Gravity:** 27-30. **Oil Outlet:** Humble Pipe Line Co., Atlantic Pipe Line Co., Gulf Ref. Co., P. L. division, and Pasotex Pipe Line Co., Texas-New Mexico Pipe Line Co. **Principal Leaseholders:** American Maracaibo Co., Atlantic Ref. Co., Continental Oil Co., Corvette Oil Corp., Eastland Oil Co., General Crude Oil Co., Gulf Oil Corp., Humble Oil & Ref. Co., Lion Oil & Ref. Co., Magnolia Pet. Co., Murchison & Closuit, Inc., Producers Pet. Corp., Republic Production Co., Richardson & Kelsey, Shell Pet. Corp., Skelly Oil Co., Sinclair Prairie Oil Co., Standard Oil Co. of Texas, Stanolind O. & G. Co., Texon Oil & Land Co. **Remarks:** To the time that this field was placed on proration, May 5, 1928, cumulative production had reached a figure of 22,613,588 bbls. Since that day an additional 162,306,068 bbls. have been produced, making an average yield of 18,870 bbls. per acre to Jan. 1, 1937. At present water has increased to 98 percent of the fluid yield.

HILL

Discovery Well: Sid Richardson Oils, Inc.'s M. J. Hill 1, SW SW SE 18, Blk. B-11, PSL Sur, completed Feb. 23, 1935. **Means of Discovery:** Subsurface geology. **Type Structure:** Unidentified. **Producing Formation:** Permian limestone 3132 to 3155 ft. **Producing Area:** 40 acres. **Extent of Development:** Discovery was pb from 3846 ft, where hole encountered salt water. **Deepest Test:** Gulf Oil Corporation's E. R. Hill 1, SWc SE Section 9, Blk. B-11, about 2¼ miles NE of Hill discovery, abandoned in sulphur water at 4170 ft. **Production to 1937:** 6620 bbls. **Daily Production July 1, 1937:** 10 bbls, 1 well. **Potential: July 1,** Marginal well. **Gravity:** 27-29. **Oil Outlet:** Shell Pipe Line Corp. **Rigs Running July 1, 1937:** None. **Remarks:** Situated about 2 miles northeast of nearest production in Halley field. Future exploratory work may tie the two areas.

KERMIT*

Discovery Well: Sayre Oil Co.'s J. F. Howe 1, NW NW SW PSL Section 12, Blk. 26, Oct. 10, 1934. **Means of Discovery:** Subsurface geology and trend from Scarborough. **Type Structure:** Anticlinal accumulation. **Producing Formation:** Permian sandy and sandy-lime, varying from 2800 to 3200 ft. **Producing Area:** 10,500 acres. **Extent of Development:** Intensive drilling carried on within the past year on 10-acre spacing has resulted in a greater portion of the north half of the area being placed on production. Minor extensions due along east and west flanks, with the north sector due to be linked with Scarborough. Production on south trend comparatively light in potential. **Estimated Ultimate Recovery:** 84,000,000 bbls. **Production to 1937:** 4,630,000 bbls. **Indicated Remaining Reserve:** 79,370,000 bbls. **Daily Production July 1, 1937:** 19,856 bbls; 620 wells. **Potential:** 533,817 bbls, July 1, 1937. **Gravity:** 34-36. **Oil Outlet:** Shell Pipe Line Corp., Humble Pipe Line Co., Gulf Ref. Co., Texas-New Mexico Pipe Line Co., Magnolia Pipe Line Co. **Rigs Running July 1, 1937:** 31. **Principal Leaseholders:** Adams, Hitchcock & Bradley, Amerada Petroleum Corp., Atlantic Ref. Co., Barnsdall Oil Co., S. Caprito, Eastland Oil Co., Emperor Oil Co., Empire Oil & Ref. Co., Bert Fields, Fox & Butler, Gulf Oil Corp., Herbert Oil Co., Humble Oil & Ref. Co., Illinois Oil Co., T. J. Jefferies, Magnolia Pet. Co., J. C. Maxwell, Inc., McCurdy & McCurdy, Mid-Continent Pet. Corp., Monday Oil Co., Navarro Oil Co., Sayre Oil Co., Sinclair Prairie Oil Co., Siosi Oil Corp., Shell Pet. Corp., Skelly Oil Co., Stanolind O&G Co., Sun Oil Co., Texas Pacific Coal & Oil Co., Tidewater Associated Oil Co., Westbrook Oil Corp. **Remarks(*):** Originally identified as Sayre field. Later linked with the Keyes and Brown-Altman areas, resulting in the trio being consolidated under Kermit heading.

KEYES (Now Kermit)

Discovery Well: Monday Oil Co. and Bert Fields (was W. Keyes-Cherry & Fields') Abilene State Bank-Conoco 1, NW NW NE 25, Blk. 26, PSL Sur., March 5, 1936. **Means of Discovery:** Trend drilling. **Type Structure:** Shore line sedimentation. **Producing Formation:** Sandy lime, 2820 to 3100 ft. **Producing Area:** Refer to Kermit. **Production to 1937:** Included with Kermit. **Remarks:** This area was originally given a separate designation but recently has been consolidated with Sayre and Brown-Altman fields to become known as Kermit field.

KEYSTONE

Discovery Well: Gulf Oil Corp.'s Keystone Cattle Co. 1, CNE NW NW 10, Blk. B-3, PSL Sur., July 7, 1935. **Means of Discovery:** Subsurface geology, combined with geophysics. **Type Structure:** Anticline. **Producing Formation:** Permian lime, 3390 to 3675 ft. **Producing Area:** 5000 acres. **Extent of Development:** Limits of productive area considered to be fairly well defined. Numerous inside locations to be drilled. **Deepest Test:** Gulf's

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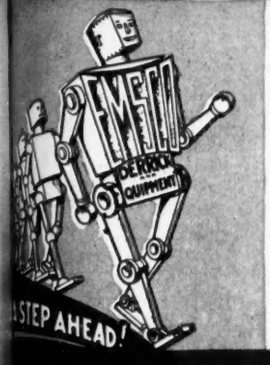

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Keystone Cattle 8, SWc 13, Blk. 2, abandoned at 4463 ft after shooting good show, 4391-4448 ft. in lower section of Permian lime. **Estimated Ultimate Recovery:** 50,000,000 bbls. **Production Through 1936:** 515,879 bbls., exclusive of West Keystone sandy lime zone. **Indicated Remaining Reserve:** 49,484,121 bbls. **Daily Production July 1, 1937:** 2044 bbls, 42 wells. **Potential:** 15,902 bbls., July 1. **Gravity:** 35-38. **Oil Outlet:** Gulf Refining Co. **Rigs Running July 1, 1937:** 9. **Principal Leaseholders:** Continental Oil Co., Amon G. Carter, W. H. Dunning, Jr., Falcon Co., Gulf Oil Corp., S. W. Richardson, Richardson Oils, Inc., J. R. Sharp, Sinclair Prairie Oil Co., Sun Oil Co.

KEYSTONE (West)

Discovery Well: Sun Oil Co.'s J. B. Walton 1, near CNE NE SE 8, Blk. B-3, PSL Sur., Nov. 21, 1935. **Means of Discovery:** Outpost well to Keystone. **Type Structure:** Productive syncline. **Producing Formation:** Sandy lime section in Permian, 3391 ft. **Producing Area:** 500 acres. **Deepest Test:** Discovery was carried to 3456 ft, sulphur water. **Production to 1937:** 61,871 bbls. **Daily Production July 1, 1937:** 432 bbls., 8 wells. **Potential:** 2411 bbls., July 1. **Gravity:** 37-38. **Oil Outlet:** Gulf Refining Co. **Rigs Running July 1, 1937:** 1. **Principal Leaseholders:** Sun Oil Co., Continental Oil Co., Amon G. Carter et al, Richardson Oils, Inc., J. R. Sharp, et al. **Remarks:** There is possibility that this syncline accumulation may be controlled by a flanking condition of the Keystone anticline, and if so, production is possible from the syncline to the north and south limits of the anticline. A per acre ultimate recovery estimate of 5000 bbls. has been made for the syncline production.

LECK

Discovery Well: Atlantic Ref. Co.-Kessler & Logan's (was Gibson-Johnson, Kessler & Logan's) Lum Daugherty 1, C S½ N½ SW 3, Blk. 74, PSL Sur., May 9, 1928. **Means of Discovery:** Geology. **Type Structure:** Anticline. **Producing Formation:** Permian limestone from 3100 to 3200 ft. **Producing Area:** 550 acres. **Extent of Development:** Defined. **Estimated Ultimate Recovery:** 3,500,000 bbls. **Production to 1937:** 2,975,000 bbls. **Indicated Remaining Reserve:** 525,000 bbls. **Daily Production July 1, 1937:** 438 bbls., 9 wells. **Potential:** 922 bbls., July 1. **Gravity:** 28-30. **Oil Outlet:** Humble Pipe Line Co. and Texas-New Mexico Pipe Line Co. **Principal Leaseholders:** Adams, Hitchcock & Bradley, Atlantic Refining Co., Sinclair Prairie Oil Co., Warner-Quinlan Co. of Texas. **Remarks:** Production performance of this area proved to be erratic, with a few wells showing an exceptionally high crude yield.

RICHARDSON-O'BRIEN

Discovery Well: Sid Richardson, Frank Kelsey and Magnolia Pet. Co.'s G. W. O'Brien-Edwards 1, NEc Section 50, Blk. F, G&MMB&A Survey, Oct. 15, 1928. **Means of Discovery:** Subsurface geology and trend. **Type Structure:** Reef. **Producing Formation:** Permian limestone 2805-2975 ft. **Producing Area:** 160 acres. **Extent of Development:** Defined. **Deepest Test:** 3105-ft. failure offsetting production. **Estimated Ultimate Recovery:** 414,453 bbls. **Production to 1937:** 399,453 bbls. **Indicated Remaining Reserve:** 15,000 bbls. **Daily Production July 1, 1937:** 18 bbls, 2 wells. **Potential:** Marginal wells. **Gravity:** 32-34. **Oil Outlet:** Shell Pipe Line Corp. **Rigs Running July 1, 1937:** None. **Principal Leaseholders:** Sid Richardson, Frank Kelsey et al, Continental Oil Co. and Gulf Oil Corp. **Remarks:** Productive area virtually circumscribed by failures, and is possibly related to the Hendrick field to the north, although dry holes are in between. Discovery well continues to flow from 16 to 20 bbls. oil daily, and has produced in excess of 182,000 bbls. oil.

SCARBOROUGH

Discovery Well: Shell Pet. Corp.-Llano Oil Co.'s (was Llano Oil Co.'s) W. F. Scarborough 1, center of PSL Sec. 1, Blk. C-22, Oct. 19, 1927. **Means of Discovery:** Subsurface geology. **Type Structure:** Anticline. **Producing Formation:** Permian sandy-lime, 2980 to 3050 ft. **Producing Area:** 3200 acres. **Extent of Development:** Defined, with the south trend linked with the Kermit field. **Estimated Ultimate Recovery:** 12,800,000 bbls. **Production to 1937:** 3,550,000 bbls. **Indicated Remaining Reserve:** 9,250,000 bbls. **Daily Production July 1, 1937:** 1974 bbls; 94 wells. **Potential:** 12,260 bbls, July 1, 1937. **Gravity:** 30-36. **Oil Outlet:** Humble Pipe Line Co., Shell Pipe Line Corp., Magnolia Pipe Line Co. and West Texas Refining Co. **Rigs Running July 1, 1937:** 2. **Principal Leaseholders:** Adams Corp. & Hitchcock & Son, Empire Oil & Ref. Co., Gulf Oil Corp., Illinois Oil Co., Magnolia Pet. Co., Moore-Hudson & Hudson, S. W. Richardson, Richardson Oils, Inc., Shell Pet. Corp., Sinclair Prairie Oil Co., The Texas Co., Tide Water Associated Oil Co. **Remarks:** Development of this field has been comparatively slow. A great number of proved locations undrilled. Area is the oldest in the Winkler County sandy-lime belt.

YOAKUM COUNTY

BENNETT

Discovery Well: Honolulu Oil Corp.-Cascade Petroleum Co.'s L. P. Bennett 1, C NE NE 678, Blk. D., J. H. Gibson Sur., April 6, 1936. **Means of Discovery:** Geophysical survey combined with surface geology. **Type Structure:** Anticline. **Producing Formation:** Permian lime, brown and laminated, between 5090 and 5364 ft. **Producing Area:** Unindicated at this stage of development. **Extent of Development:** Two wells on production. **Deepest Test:** Discovery carried to 5283 ft., from which it was plugged back to 5364 ft. **Daily Production July 1, 1937:** 225 bbls, 3 wells. **Potential:** 807 bbls, July 1. **Gravity:** 34. **Oil Outlet:** Tank trucks. **Rigs Running May 25, 1937:** 2. **Principal Leaseholders:** Honolulu Oil Corp., Cascade Petroleum Co., T. P. Coal & Oil Co., The Texas Co., Magnolia Pet. Co., Mid-Continent Pet. Corp., Siosi Oil Corp., Shell Pet. Corp.

NEW MEXICO

LEA COUNTY

COOPER

Discovery Well: General Crude Oil Co. and Magnolia Petroleum Co.'s A. E. Meyer 1, NE NE SE 22-24s-36e, 70,000,000 cu ft gas August, 1929, and found oil April, 1934. **Means of Discovery:** Wildcat gas discovery deepened to oil. **Type Structure:** Anticline. **Producing Formation:** Gas from a thick section overlying dolomite; oil from 3550 ft in Permian lime. **Producing Area:** 4000 acres. **Extent of Development:** Well defined, being determined as narrow east and west, and with south limitation apparently established by minor producers. Any expansion must be to the north, toward Lynn. **Estimated Ultimate Recovery:** 30,000,000 bbls. **Production to 1937:** 5,683,000 bbls. **Indicated Remaining Reserve:** 24,317,000 bbls. **Daily Production July 1, 1937:** 6544 bbls; 85 wells. **Potential:** Wells prorated on flat allowable basis. **Gravity:** 29-30. **Oil Outlets:** Texas-New Mexico Pipe Line Co., Humble Pipe Line Co., Gulf Refining Co. **Rigs Running July 1, 1937:** 2. **Principal Leaseholders:** Amerada Petroleum Corp., Continental Oil Co., Empire Oil & Refining Co., General Crude Oil Co., Gulf Oil Corp., Humble Oil & Refining Co., Kan-Mex Oil Corp., Phillips Petroleum Co., Pure Oil Co., Repollo Oil Co., Skelly Oil Co., Stanolind Oil & Gas Co., The Texas Co., Tide Water Associated Oil Co.

EAVES (South Jal)

Discovery Well: Gas discovered by Continental Oil Co. et al (was Marland & California Co.'s) J. S. Eaves 1, SW SW SE 19-26s-37e, Dec., 1928, for 42,000,000 cu ft. Oil was discovered by same operator's McCallister 1-A, SW SW SE 24-26s-36e, completed Sept. 13, 1929. **Means of Discovery:** Geology and trend. **Type of Structure:** Anticline. **Producing Formation:** Permian lime, 3100 to 3200 ft. **Producing Area:** 1500 acres. **Extent of Development:** Drilled wells have virtually established productive area as being narrow and extending in a general north and south direction. Inside locations are to be drilled and extension must be toward Jal to the north or toward the Eaves sector in Texas. **Estimated Ultimate Recovery:** 7,500,000 bbls. **Production Through 1936:** 548,000 bbls. **Indicated Remaining Reserve:** 6,952,000 bbls. **Daily Production July 1, 1937:** 1150 bbls; 16 wells. **Potential:** Prorated on a flat per-well basis. **Gravity:** 27-32. **Oil Outlets:** Humble Pipe Line Co., Texas-New Mexico Pipe Line Co. **Principal Leaseholders:** Continental Oil Co. et al, Gulf Oil Corp., Stanolind Oil & Gas co., The Texas Co. **Remarks:** Productivity of area is irregular and premature water encroachment is typical of the field.

EUNICE (including South Eunice)

Discovery Well: Continental Oil Co. (was Marland Oil Co. and The California Co.'s) Lockhart 1-B-31, NE NW NW 31-21s-36e, March, 1929. **Means of Discovery:** Surface geology combined with trend drilling. **Type Structure:** Anticline. **Producing Formation:** White lime between 3800 and 3860 ft. **Producing Area:** 20,000 acres. **Extent of Development:** Field will definitely be linked with Monument production immediately north. For proration purposes this structure is divided into two sections. **Deepest Test:** Ohio Oil Co.'s State-McDonald 5, C SE NW 16-22s-36e, drilled to 6202 ft, recording minor saturation in lower section. **Estimated Ultimate Recovery:** 200,000,000 bbls. **Production Through 1936:** 13,200,000 bbls. **Indicated Remaining Reserve:** 186,800,000 bbls. **Daily Production July 1, 1937:** 33,353 bbls; 412 wells. **Potential:** Prorated on flat well allowable basis. **Gravity:** 36. **Oil Outlets:** Texas-New Mexico Pipe Line Co., Gulf Refining Co., Shell Pipe Line Co., Atlantic Pipe Line Co., Humble Pipe Line Co. **Rigs Running July 1, 1937:** 20. **Principal Leaseholders:** Amerada Petroleum Corp., Atlantic Refining Co., Continental Oil Co., Devonian Oil Co., Empire Oil & Refining Co., Getty Oil Co., Gulf Oil Corp., Humble Oil & Refining Co., Landreth Production Corp., Mid-Continent Petroleum Corp., Murray et al, Peerless Oil & Gas Co., Phillips Petroleum Co., Repollo Oil Co., Samedan Oil Corp., Shell Petroleum Corp., Skelly Oil Co., Standard Oil Co. of Texas, Sun Oil Co., The Texas Co., Tide Water Associated Oil Co., Two States Oil Co., W. K. Royalty Co. **Remarks:** East and west limits of production have not been established through drilled wells.

HARDY

Discovery Well: Barnsdall Oil Co.'s Hardy 1, C SE NE 3-27s-36e, March, 1936. **Means of Discovery:** Surface geology. **Type Structure:** Shore line sedimentation. **Producing Formation:** First show in lime at 3490 ft; pay from 3748 to 3800 ft. **Producing Area:** 760 acres. **Extent of Development:** Area has scattered production with indications pointing toward probable north and south extension to present productive area, and less likelihood of east or west expansion. Inside locations to be drilled. **Estimated Ultimate Recovery:** 3,800,000 bbls. **Production to 1937:** 70,000 bbls. **Indicated Remaining Reserve:** 3,730,000 bbls. **Daily Production July 1, 1937:** 1128 bbls; 21 wells. **Potential:** Prorated to flat well allowable basis. **Gravity:** 35 to 38. **Oil Outlets:** Shell Pipe Line Co., Gulf Refining Co. **Rigs Running July 1, 1937:** 11. **Principal Leaseholders:** Barnsdall Oil Co., J. C. Clower, Continental Oil Co., Getty Oil Co., Gulf Oil Corp., Magnolia Petroleum Co., Ohio Oil Co., Repollo Oil Co., Sun Oil Co., The Texas Co. **Remarks:** First production north of town of Eunice; top of major pay in lime found in discovery well at 3768 ft when well began flowing by heads.

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WEST TEXAS—NEW MEXICO INSERT MAP

ACCOMPANYING this issue of The OIL WEEKLY is a large two-color insert map of the Permian Basin district of West Texas and New Mexico.

It is unusually complete, in that all wells, both producing and dry holes, are shown, as are county and survey lines. Each producing field has been outlined in red color, and all dry holes have been circled with color to make them stand out. Another pertinent presentation of the map is the publishing of data on each dry hole.

We are indebted to Southwest Mapping Company of Fort Worth, Texas, for the data, drafting and permission to publish this map. The above company is prepared to furnish additional duplicate copies of the map, and also in larger sizes.

HOBBS

Discovery Well: Stanolind Oil & Gas Co.'s (was Midwest Refining Co.'s) State 1, NE NE NE 9-19s-38e, Nov., 1928. **Means of Discovery:** Geophysical survey. **Type Structure:** Anticlinal fold, about 6 miles in length, by 1½ in width, trending northwest-southeast. **Producing Formation:** Bowers sand—3175 to 3225 ft; White lime—4000 to 4210 ft. **Producing Area:** 9800 acres. **Extent of Development:** Hobbs has reached an apparent maximum of development. Delimited by failures. Edge production zones believed established. **Estimated Ultimate Recovery:** 147,000,000 bbls. **Production Through 1936:** 73,685,000 bbls. **Indicated Remaining Reserve:** 74,315,000 bbls. **Daily Production July 1, 1937:** 20,006 bbls; 259 wells. **Potential:** 2,155,943 bbls. **Gravity:** 34-36. **Oil Outlets:** Shell Pipe Line Co., Atlantic Pipe Line Co., Humble Pipe Line Co. **Rigs Running July 1, 1937:** 2. **Principal Leaseholders:** Amerada Petroleum Corp., Atlantic Refining Co., Continental Oil Co., Empire Oil & Refining Co., Getty Oil Co., Gulf Oil Corp., Humble Oil & Refining Co., Landreth Production Corp., Magnolia Petroleum Co., Mid-Continent Petroleum Corp., Ohio Oil Co., Oil Well Drilling Co., Repollo Oil Co., Samedan Oil Corp., Shell Petroleum Corp., Skelly Oil Co., Standard Oil Co. of Texas, Stanolind Oil & Gas Co., The Texas Co., Texas Pacific Coal & Oil Co., Tide Water Associated Oil Co., Walker Oil Corp. **Remarks:** The production peak for this field was May, 1933, when 1,146,500 bbls of crude were produced. Acid treatment was used to advantage to increase production coming from the two sections of the White lime; the most productive zone being in the upper pay at a dolomitic lime break.

JAL (North Jal)

Discovery Well: Skelly Oil Co.'s Joyner 1, NE NE SE 26-25s-37e, Jan. 30, 1929. **Means of Discovery:** Geological trend. **Type Structure:** Dolomite reef. **Producing Formation:** Porous limestone. **Producing Area:** 2000 acres. **Extent of Development:** West edge limited by an abundance of water in wells; east border by dry gassers; northwest trend open for extensions and possibly link with Cooper field; and south trend only partially defined, with some prospects of being connected to Eaves field. **Estimated Ultimate Recovery:** 15,000,000 bbls. **Production Through 1936:** 4,965,000 bbls. **Indicated Remaining Reserve:** 10,035,000 bbls. **Daily Production July 1, 1937:** 1289 bbls; 32 wells. **Potential:** Prorated to flat well allowable basis. **Gravity:** 28-30. **Oil Outlets:** Humble Pipe Line Co., Texas-New Mexico Pipe Line Co. **Principal Leaseholders:** Amerada Petroleum Corp., Anton Chico Development Co., Barnsdall Oil Co., Byrd-Frost, Inc., Continental Oil Co., Empire Oil & Refining Co., General Crude Oil Co., Gulf Oil Corp., Humble Oil & Refining Co., Magnolia Petroleum Co., Phillips Petroleum Co., Pure Oil Co., Repollo Oil Co., Skelly Oil Co., Southern Exploration Co., Stanolind Oil & Gas Co., The Texas Co., Tide Water Associated Oil Co.

LANGLIE

Discovery Well: Anderson-Prichard Oil Corp.'s (was R. H. Henderson et al) Langlie 1, C SE SE 8-25s-37e, Sept., 1935. **Means of Discovery:** Trend location. **Type Structure:** Shore Line sedimentation. **Producing Formation:** Sandy lime from 3300 to 3500 ft. **Producing Area:** 1000 acres based on present number producing wells with 40-acre spacing. **Extent of Development:** This field has been sparsely developed. Producing horizon has been proven to be highly irregular both as to occurrence and productivity. **Estimated Ultimate Recovery:** 5,000,000 bbls. **Production to 1937:** 193,000 bbls. **Indicated Remaining Reserve:** 4,807,000 bbls. **Daily Production July 1, 1937:** 1656 bbls; 25 wells. **Potential:** Prorated on a flat well allowable basis. **Gravity:** 35-38. **Oil Outlet:** Shell Pipe Line Co. **Rigs Running July 1, 1937:** 7. **Principal Leaseholders:** Anderson Prichard Oil Co., Culbertson et al, A. R. Eppenauer, Gulf Oil Corp., Humble Oil & Refining Co., H. W. Leonard, Repollo Oil Co., Skelly Oil Co., Stanolind Oil & Gas Co., Sun Oil Co., The Texas Co., Tide Water Associated Oil Co. **Remarks:** Although definitely related to Mattix area to the north, for proration purposes Langlie is separately designated.

LYNCH

Discovery Well: The Texas Co. et al's B. Lynch 1. NWc SE 34-20s-34e, March 31, 1929. **Means of Discovery:** Surface geology. **Type Structure:** Unidentified. **Producing Formation:** Broken Permian lime 3700-3800 ft. **Producing Area:** 800 acres. **Extent of Development:** Considered defined for production. **Deepest Test:** Amerada Petroleum Corp.'s State 1, east of production, drilled to sulphur water at 3958 ft. **Estimated Ultimate Recovery:** 8,000,000 bbls. **Production to 1937:** 5,909,700 bbls. **Indicated Remaining Reserve:** 2,090,300 bbls. **Daily Production July 1, 1937:** 837 bbls; 11 wells. **Potential:** Prorated on a flat per-well basis. **Gravity:** 29-31. **Oil Outlet:** Texas-New Mexico Pipe Line Co. **Rigs Running July 1, 1937:** 1. **Principal Leaseholders:** The Texas Co., General Crude Oil Co., Empire Oil & Refining Co. **Remarks:** Field makes high percentage of water, which caused abandonment of some wells, including properties of Continental Oil Co. and Snowden & McSweeney Co. Discovery well continues to make its maximum proration allowable.

LYNCH (North)

Discovery Well: The Texas Co. et al's J. S. Lea 1, SWc NW 14-20s-34e, Sept. 5, 1934. **Means of Discovery:** Geology. **Type Structure:** Unidentified. **Producing Formation:** Brown sand 3556-3622 ft. **Producing Area:** Single well. **Extent of Development:** Productive area not outlined, except for 3815-ft failure ⅝-mile northwest of discovery. **Production to 1937:** 22,526 bbls. **Daily Production July 1, 1937:** 40 bbls. **Potential:** Marginal producer. **Gravity:** 37-38. **Oil Outlet:** Texas-New Mexico Pipe Line Co. **Rigs Running July 1, 1937:** 1. **Principal Leaseholders:** The Texas Co. **Remarks:** This area is 2½ miles north of the original Lynch field, and is producing higher gravity oil from sand zone above the Permian lime. Discovery company is drilling a west offset to its producer.

LYNN

Discovery Well: Gas discovered by Continental Oil Co. et al's (was Mariand Oil Co. and The California Co.) Lynn 1, NW NW SE 26-23s-36e, 30,000,000 cu ft, March, 1929. Oil discovered by Texas Pacific Coal & Oil Co.'s State 2-A, NW NW SW 21-23s-36e,

Smartly run departments and projects never let up in their hunt for lower operating costs. They seek out savings everywhere. That's why more and more plants switch to HEWITT industrial rubber goods each year . . . and then stick to specifying them. Every HEWITT product is made with an eye to lowering YOUR operating costs. The longer life that HEWITT builds in, the ceaseless search for improved construction, the unending developments that lead to greater standing, all are directed toward that goal. HEWITT Maltese Cross *asbestos construction* Steam Hose, for example, cuts operating costs to bed rock. There are HEWITT distributors located near your plant. They will welcome an opportunity to discuss HEWITT industrial rubber goods on the solid basis of dollars and cents performance. They are listed in the classified telephone directory of industrial centers under "Rubber Goods" or "Belting".

HEWITT

RUBBER CORPORATION BUFFALO N.Y.

HOSE • CONVEYOR AND TRANSMISSION BELTS • PACKING

March, 1930. **Means of Discovery:** Random drilling. **Type Structure:** Reef. **Producing Formation:** Permian limestone, 3705-3788 ft. **Producing Area:** 240 acres productive, this area being based upon present number of wells producing on 40 acres. **Extent of Development:** Oil production certain to expand in general northwest-southeast trend, but somewhat narrow in width. **Deepest Test:** General Crude Oil Co.'s (was Cranfill-Reynolds) State 1-C, north offset to oil production on discovery tract, drilled to sulphur water at 3953 feet, and plugged back successfully for flowing production. **Estimated Ultimate Recovery:** 2,400,000 bbls. **Production to 1937:** 340,280 bbls. **Indicated Remaining Reserve:** 2,059,720 bbls. **Daily Production July 1, 1937:** 262 bbls, 6 flowing wells. **Potential:** Proration on a flat per-well basis. **Gravity:** 28-29. **Oil Outlet:** Texas-New Mexico Pipe Line Co. **Rigs Running July 1, 1937:** 1. **Principal Leaseholders:** Texas Pacific Coal & Oil Co., Continental Oil Co. et al, General Crude Oil Co., Repollo Oil Co. and Shell Petroleum Corp. **Remarks:** This area located on a direct strike between Cooper and Eunice lime areas, and yields prolific gas wells on east and west flanks of the oil belt. Discovery well continues to flow 50 barrels daily after being on production more than 7 years.

MALJAMAR

Discovery Well: Maljamar Oil & Gas Corp.'s M. E. Baish 1, NEc 21-17s-32e, July, 1926; M. E. Baish 5, opened shallow pay in C SW NE 21-17s-32e, Dec., 1935. **Means of Discovery:** Wildcat location. **Type Structure:** Anticline. **Producing Formation:** Permian lime, 4100 to 4150 ft. **Producing Area:** 580 acres. **Extent of Development:** The possibility of further expansion of this productive area is indicated by present edge producers. Pool being normally developed with most inside locations drilled. **Estimated Recovery:** 5,800,000 bbls. **Production Through 1936:** 3,585,000 bbls. **Indicated Remaining Reserve:** 2,215,000 bbls. **Daily Production July 1, 1937:** 775 bbls; 10 wells. **Potential:** 1,181 bbls. **Gravity:** Shallow sand 40, deep lime 37. **Oil Outlet:** Maljamar Oil & Gas Corp. **Rigs Running July 1, 1937:** 1. **Principal Leaseholder:** Mal-Jamar Oil & Gas. Corp.

MATTIX

Discovery Well: Amon G. Carter et al's G. H. Mattix 1, C SE NW 3-24s-37e, July, 1935. **Means of Discovery:** Surface geology. **Type Structure:** Shore line sedimentation. **Producing Formations:** Sandy lime above White lime between 3875 and 3925 ft. **Producing Area:** 880 acres, based upon present number wells producing on 40 acres. **Extent of Development:** Inside locations to be drilled. **Estimated Ultimate Recovery:** 4,200,000 bbls. **Production Through 1936:** 65,000 bbls. **Indicated Remaining Reserve:** 4,135,000 bbls. **Daily Production July 1, 1937:** 1,656 bbls, 23 wells. **Potential:** Proration on a flat per-well basis. **Gravity:** 37-38. **Oil Outlets:** Shell Pipe Line Corp., Humble Pipe Line Co. **Rigs Running July 1, 1937:** 12. **Principal Leaseholders:** A. G. Carter, Dalport Oil Corp., Gulf Oil Corp., Plains Production Co., Repollo Oil Co., Shell Petroleum Corp., Stanolind Oil & Gas Co., The Texas Co.

MONUMENT

Discovery Well: Amerada Petroleum Corp.'s State 1-D, CNW NW 1-20s-36e, February, 1935, drilled deeper March, 1935. **Means of Discovery:** Geology, combined with geophysics. **Type Structure:** Anticlinal fold. **Producing Formation:** White lime, 3850 to 4025 ft. **Producing Area:** 17,500 acres. **Extent of Development:** All inside locations have been drilled according to 40-acre unit. Field will be joined with Eunice to south. Northwest wells have been discouraging as being light in volumes. West edge being slowly expanded, and 3 dry holes, the only failures in the field, make eastern expansion questionable. Direct northern extension is probable along major trend. **Estimated Ultimate Recovery:** 175,000,000 bbls. **Production Through 1936:** 3,820,000 bbls. **Indicated Remaining Reserve:** 171,180,000 bbls. **Daily Production July 1, 1937:** 34,354 bbls, 405 wells. **Potential:** Wells prorated on BHP and 40-acre unit basis. **Gravity:** 32-35. **Oil Outlets:** Gulf Refining Co., Shell Pipe Line Corp., Texas-New Mexico Pipe Line Co. **Rigs Running July 1, 1937:** 17. **Principal Leaseholders:** Amerada Petroleum Corp., Anderson-Prichard Oil Corp., Atlantic Refining Co., Barnsdall Oil Co., Continental Oil Company, Ennis-hope Oil Corp., Empire Oil & Refining Co., General Crude Oil Co., Gulf Oil Corp., Humble Oil & Refining Co., Ohio Oil Co., Oil Well Drilling Co., Phillips Petroleum Co., Repollo Oil Co., Republic Production Co., Shell Petroleum Corp., Skelly Oil Co., Stanolind Oil and Gas Co., Sun Oil Co., Superior Oil Co., The Texas Co., Tidewater Associated Oil Co., Fred Turner, Jr.

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CORDOVA UNION OIL CORPORATION

SINCLAIR BUILDING

FT. WORTH, TEXAS

George B. McCamey

President

PENROSE (South Eunice)

Discovery Well: N. G. Penrose-Rowan & Nichols' Cary 1, C NW SW 22-22s-37e, Jan. 8, 1936. **Means of Discovery:** Geology. **Type Structure:** Shore line sedimentation. **Producing Formation:** Sandy lime, 3500 to 3600 ft. **Producing Area:** 5000 acres. **Extent of Development:** Apparently defined to east and west, but will definitely extend to Hardy field to the north and possibly to the Skelly area to the south. Inside locations to be drilled. **Estimated Ultimate Recovery:** 25,000,000 bbls. **Production Through 1936:** 250,000 bbls. **Indicated Remaining Reserve:** 24,750,000 bbls. **Daily Production July 1, 1937:** 2857 bbls, 43 wells. **Potential:** Prorated on a flat per-well basis. **Gravity:** 35-38. **Oil Outlet:** Shell Pipe Line Corp. **Rigs Running July 1, 1937:** 16. **Principal Leaseholders:** A. G. Carter, Barney Cockburn, Continental Oil Co., Devonian Oil Co., Empire Oil & Refining Co., J. E. Farrel, Humble Oil & Refining Co., Landreth Production Corp., Magnolia Petroleum Co., Ohio Oil Co., Repollo Oil Co., Samedan Oil Corp., Skelly Oil Co., Mac P. Stauffer, W. H. Street et al, The Texas Co., Tidewater Associated Oil Co.

RHODES

Discovery Well: The Texas Co. et al's W. H. Rhodes 1, SE NE NW 22-26s-37e, Nov. 3, 1927. **Means of Discovery:** Wildcat location. **Type Structure:** Unidentified. **Producing Formation:** Sandy-lime, 3212-3213 ft. **Producing Area:** 40 acres, with dry gassers to northwest and southeast. **Extent of Development:** Production zone undeveloped, but considered minor and limited. **Production to 1937:** 90,216 bbls. **Daily Production July 1, 1937:** 55 bbls. **Potential:** Marginal producer. **Gravity:** 40. **Oil Outlet:** Texas-New Mexico Pipe Line Co. **Principal Leaseholders:** The Texas Co., Amerada Petroleum Corp. and Columbia Carbon Co., joint owners Federal permit bearing discovery well. **Remarks:** This pool limited to the single well, which made gas from 3,000,000 to an estimated 25,000,000 cu ft daily. Natural gas disposed of to El Paso Natural Gas Co. During years productive, yield has varied from 20 to 100 bbls daily, flowing natural.

SKELLY

Discovery Well: Skelly Oil Co. & Unit Members' B. F. Harrison 1, C NW SW 5-23s-37e, Feb. 25, 1936. **Means of Discovery:** Trend and regional subsurface geology. **Type Structure:** Accumulation through change in porosity, along geologic shore line. **Producing Formation:** Sandy lime, 3600 to 3750 ft. **Producing Area:** 1600 acres indicated as productive. **Extent of Development:** Defined to west by failures and to the east by small producers. Evident field will extend north to Penrose and south to Mattix. **Deepest Test:** Gulf Oil Corp.'s F. C. King 1, C SW NW 5-23s-37e, ¼-mile north of discovery, missed oil and gas, abandoned in sulphur water at 4052 ft. **Estimated Ultimate Recovery:** 8,000,000 bbls. **Production to 1937:** 196,813 bbls. **Indicated Remaining Reserve:** 7,803,187 bbls. **Daily Production July 1, 1937:** 1303 bbls, 21 wells. **Potential:** Wells prorated on flat allowable. **Gravity:** 37-38. **Oil Outlet:** Shell Pipe Line Corp. **Rigs Running July 1, 1937:** 6. **Principal Leaseholders:** Skelly Oil Co., Samedan Oil Corp., Sun Oil Co., Gulf Oil Corp., and Shell Petroleum Corp.

VACUUM

Discovery Well: Magnolia Petroleum Co.'s (was Vacuum Oil Co.) State 1, C of W1 13-17s-34e, July 29, 1929. **Means of Discovery:** Torsion balance reconnaissance combined with surface geology. **Type Structure:** Structural high, probably with closure. **Producing Formation:** Permian lime from 4602 to 4900 ft. Production increased gradually with increased depth. **Producing Area:** 80 acres. **Extent of Development:** Two wells on geologic feature at this time, with no dry holes on structural enclosure. **Deepest Test:** Both wells found sulphur water contact at about 4900 ft. and PB. **Production to 1937:** 7296 bbls. **Daily Production July 1, 1937:** 170 bbls, 2 wells. **Potential:** Prorated on a flat well basis. **Gravity:** 35-36. **Oil Outlet:** Used locally for drilling fuel. **Rigs Running July 15, 1937,** 1. **Principal Leaseholders:** Magnolia Petroleum Co., Phillips Petroleum Co., The Texas Co., Rycade Oil Corp. **Remarks:** This productive high is on the south flank of Maljamar anticline.

UNIDENTIFIED

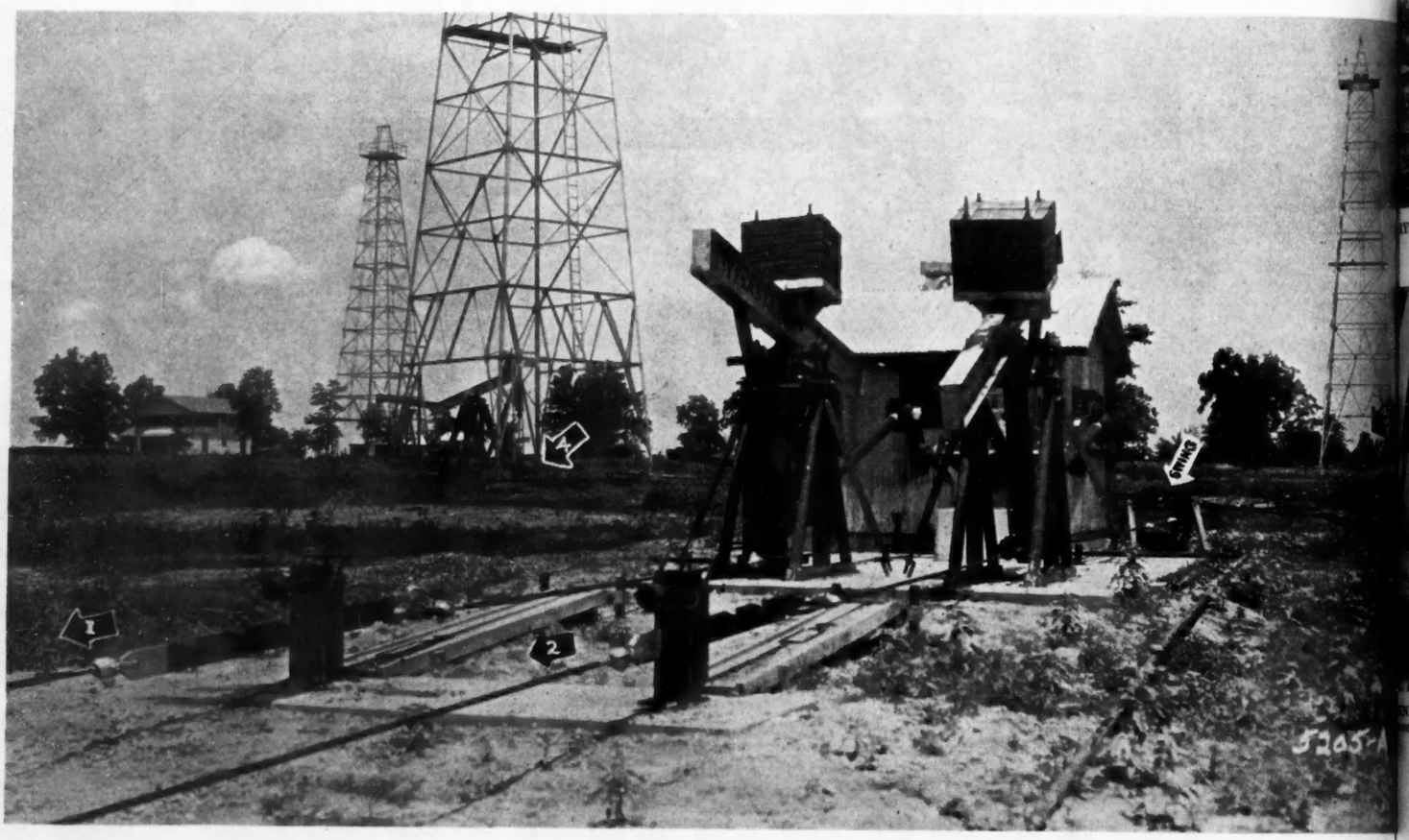
Discovery Well: Jim W. Brown & Reynolds' Parcell-Conoco 1, C NW SE 8-21s-38e, near Texas border, April, 1937. **Means of Discovery:** Random. **Type Structure:** Anticline. **Producing Formation:** Permian limestone at 4371-4391 ft, plugged back from sulphur water at 4401 ft. **Producing Area:** Single well. **Extent of Development:** Production trend to north cut off by failures. **Daily Production July 1, 1937:** 1. **Gravity:** 28. **Rigs Running July 1, 1937:** 1. **Principal Leaseholders:** J. W. Brown & Reynolds, Continental Oil Co et al, Stanolind Oil & Gas Co., The Texas Co., Gulf Oil Corp., Amerada Petroleum Corp. **Remarks:** Discovery well rated 10 bbls daily, but has not been placed on steady production due to absence of pumping equipment.

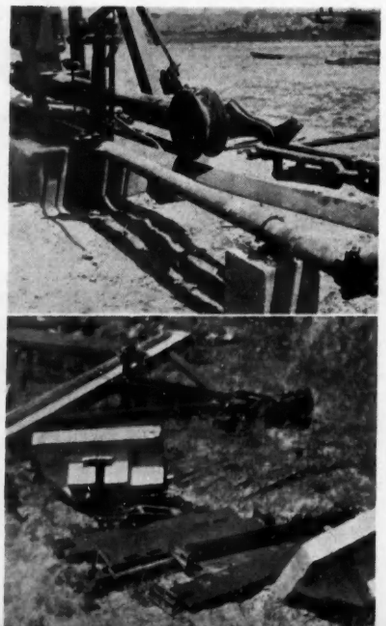
PUMPING EQUIPMENT

Manufactured by
TEXAS STEEL COMPANY, FORT WORTH, TEXAS

These Four Well Hook-up "get the JOB done Right"

There can be only one good reason why most operato when they have to put their "wells on pump," select Te steel backside pumping equipment — and that reason is b cause Texasteel "gets the job done right."





CIRCLE TOP—East Texas four well hookup w adjustable counter balance, showing also the n roller bearing wrist pin connection.

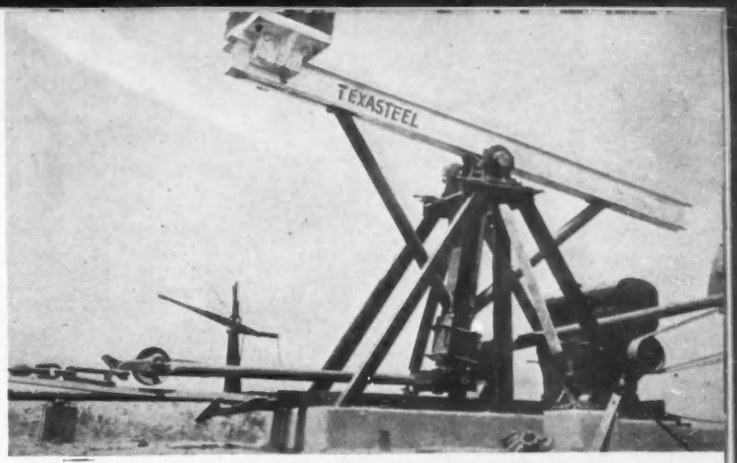
TALCO—Four well hookup using counter balan Texasteel pendulum type backside assembli Notice the arrows pointing to the wells bei pumped. The depth of these wells is around 4,0 feet, so the equipment must be extra heavy.

CIRCLE BOTTOM—Close up of one of the fo wells shown above. The four new No. 8 Texas Jacks are great big heavy fellows—but thanks skillful aligning and manufacture the cent power necessary to operate them is very ordina

LOWER CENTER—A close up of the new sa knock off which can be built into Texas Assemblies.

BOTTOM—Shows parts of a brand new assem ready to be set in place.

TALCO, TEXAS—Four well hookup on the Hargraves lease by W. B. Hinton.



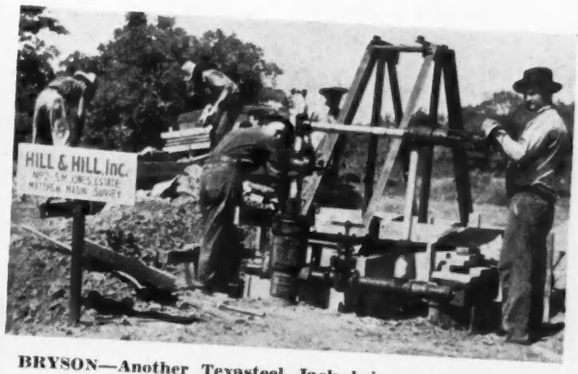
McCAMEY—Backside pumping assembly with counter balance being worked from a unit. Notice Jack beam at extreme right. Note the new Texasteel Safety Knock Off.

TSON—Lining up a 4-well hookup similar to the one above. This photo shows two of the wells. Notice the arrows.

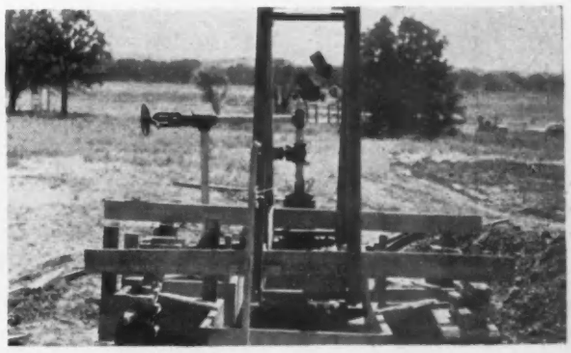
TEXASTEEL

JACK COUNTY—Another well is being hooked on to the Texasteel unit shown in the foreground. The arrow indicates where a new roller type combination hold up and hold down is located.

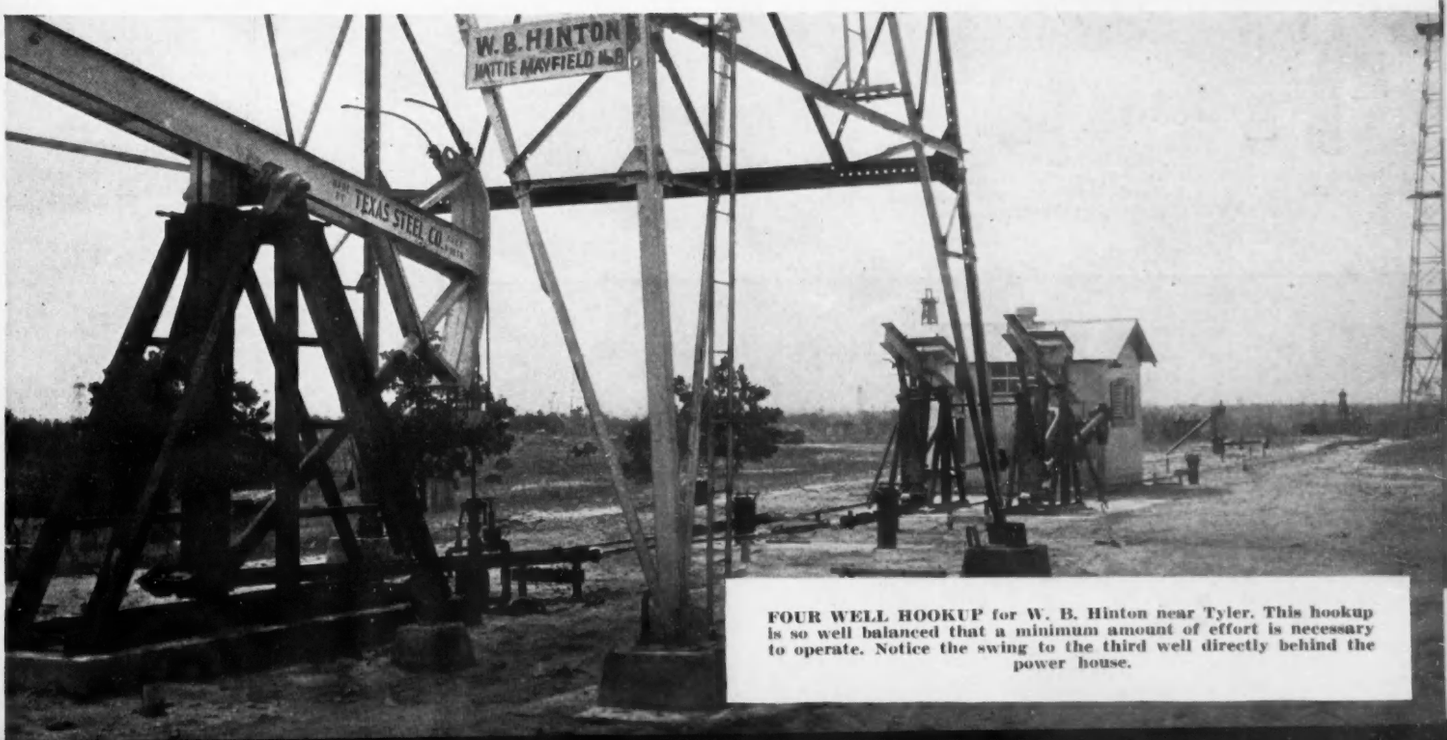
ECTIONS—Close up of the bridle ection used with the New Safety knock off.



BRYSON—Another Texasteel Jack being set in a four-well hookup for Hill & Hill, Inc.



BRYSON—Another view of a four-well hookup showing three wells down the line. The first arrow shows the location of the assemblies. The second arrow, the farthest well, and directly between is the second well.



FOUR WELL HOOKUP for W. B. Hinton near Tyler. This hookup is so well balanced that a minimum amount of effort is necessary to operate. Notice the swing to the third well directly behind the power house.

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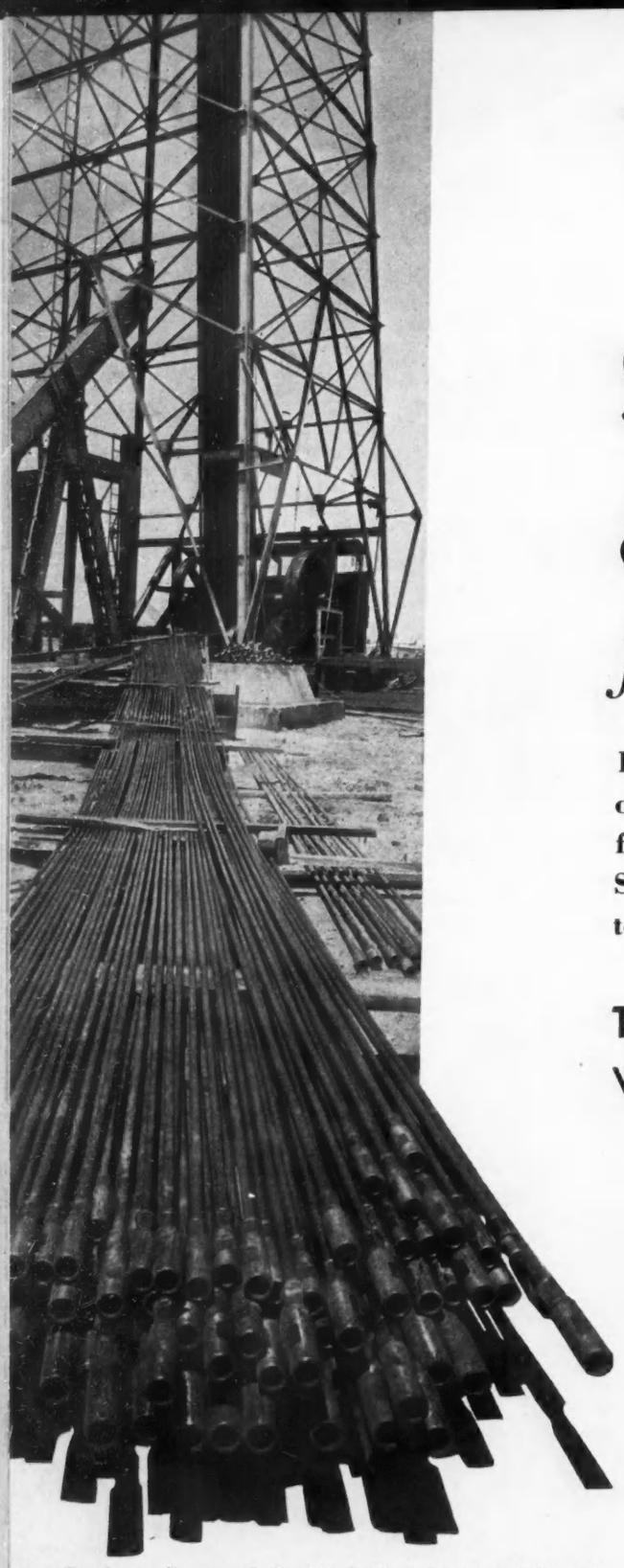
ELECTRIC STEEL

SUCKER RODS & PULL RODS

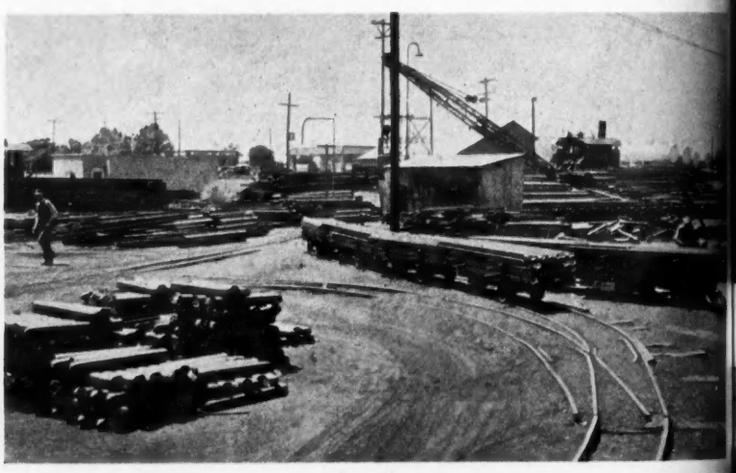
for every field condition

In whatever field you operate — whether in the "Piney Woods" or the "Cactus Patch"—there's a Texasteel sucker rod made just for your field — because we are the only organization in the Southwest which manufactures them complete from molten metal to finished rods.

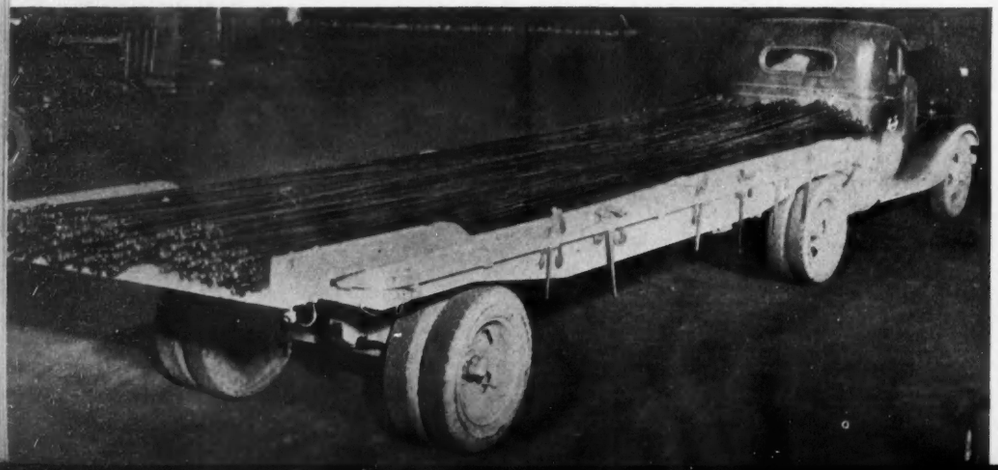
TEXASTEEL HIGH TENSILE RODS COST LESS-WEIGH LESS-HAVE GREATER STRENGTH



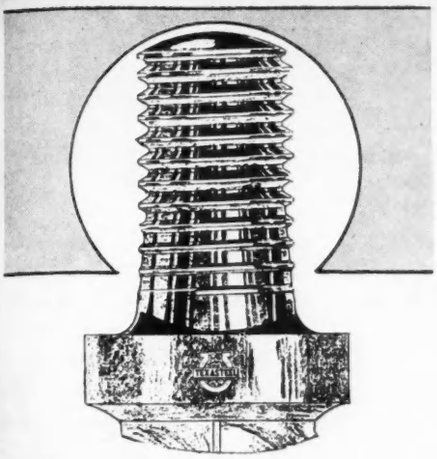
Here's a mile of real "trouble free" performance being put into this "smart" operator's well because they are High Tensile Texasteel sucker rods.

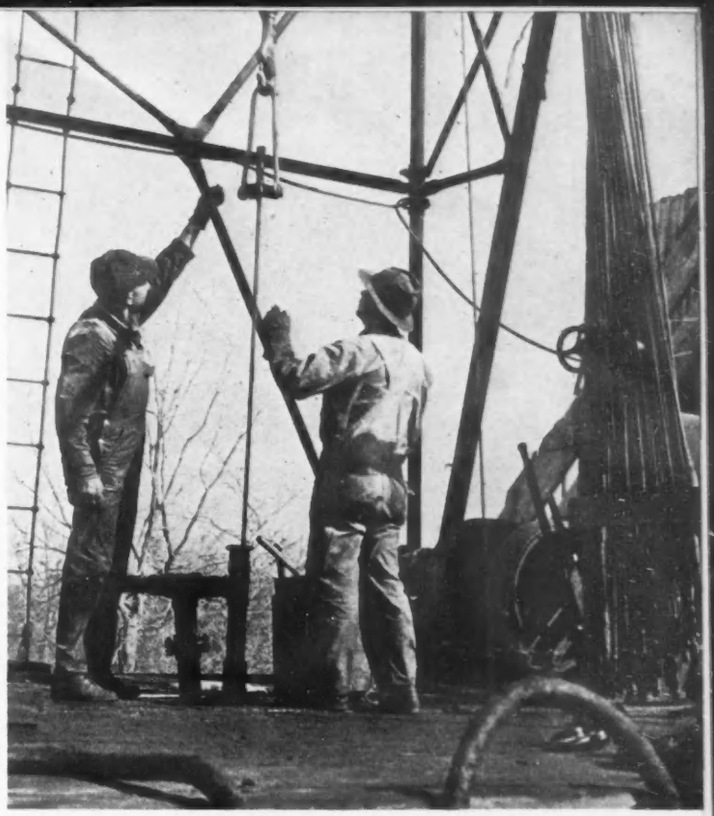


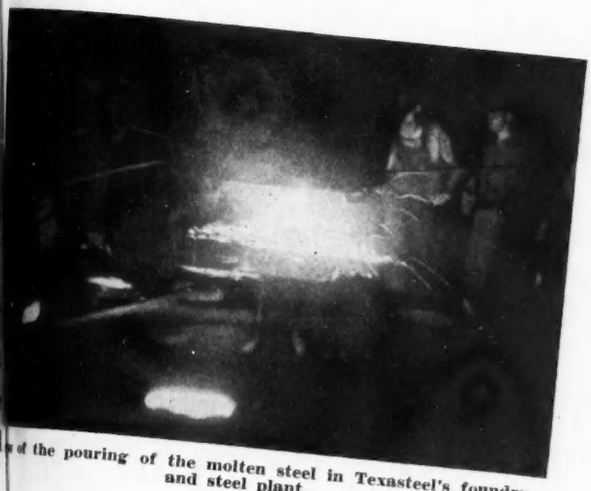
View showing a section of the steel mill's supply yard. Notice the "Electric Steel" billets in the foreground. They're your future sucker and pull rods.



A Texasteel truck loaded with sucker rods and headed for the oil fields. We work 24 hours a day to serve you.







of the pouring of the molten steel in Texasteel's foundry and steel plant.

Sucker rods being dipped in rust resistant paint. Also notice the men in the background upsetting the rods so they can be threaded.

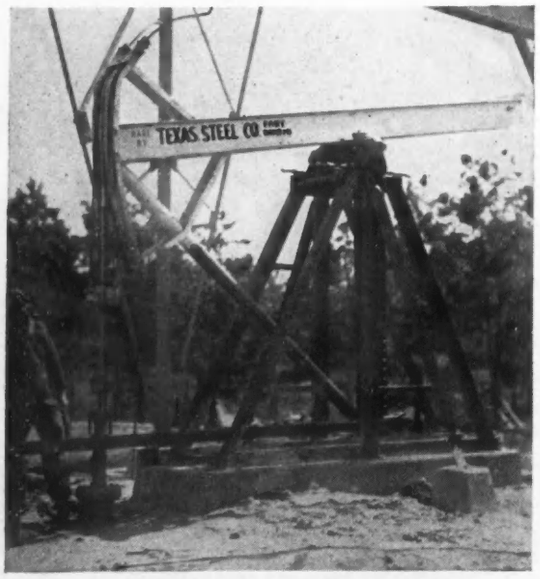
A string of high tensile Texasteel pull rods. When you have a long way to go every pound means something, but with "HT" you save weight, load, and money.

Another view of the sucker rod plant where the rods are finished up after they come from the rolling mill—from molten metal to a finished rod for your well.

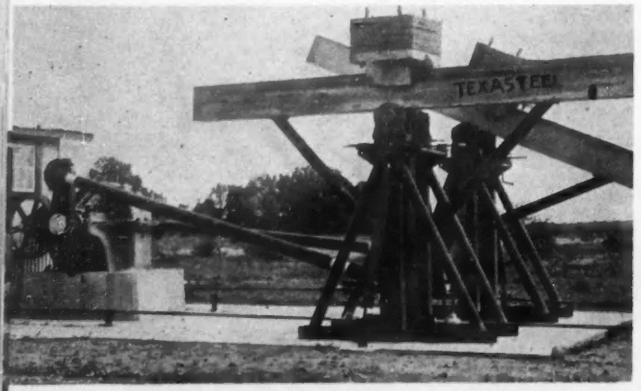
Another view of Texasteel pull rods in a multiple hookup from a central power. Notice the Special Texasteel Safety Knock Offs.

EAST TEXAS—A four-well hookup by using all Texasteel equipment. Notice swing to well in foreground.

YOUNG COUNTY—Texasteel equipment has been used on this lease for several years to the complete satisfaction of the superintendent.



TEXASTEEL No. 7—Cable head Jack just connected. Also notice the special Industrial type stuffing box, and casing head on this well.

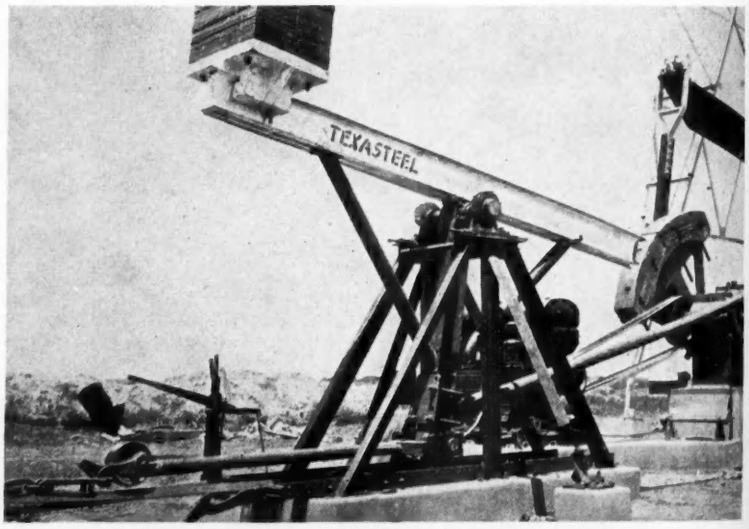


TALCO — Two Texasteel counter balanced backside assemblies used to pump four wells. The weights are easily adjusted on the beam by a simple crank and gear train arrangement.

Operators in every field have found... TEXASTEEL PUMPING EQUIPMENT ECONOMICAL

On these two pages are pictures of just a few of the many operators who use Texasteel pumping equipment and are well satisfied with the results they are getting.

Let the Texasteel man in your district Help you Save



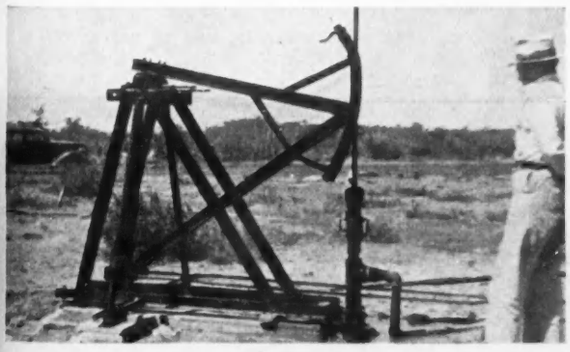
ARCHER COUNTY—Single backside assembly which has not been connected to the second well. Note the position of the counter balance weight, also the new Safety knock off built in.

BRYSON—Erection of a new four-well assembly. Our experienced field men are ready to help you with your pumping problems—just call us.

JACK COUNTY—A new No. 5 Texasteel Jack set and ready for a string of rods.

YOUNG COUNTY—This link head Jack has been doing a "jam up" job for this Texas operator.

DUVAL COUNTY—A No. 4 Texasteel Jack ready to be hooked up. J. M. Suggert, superintendent, smiles his approval.



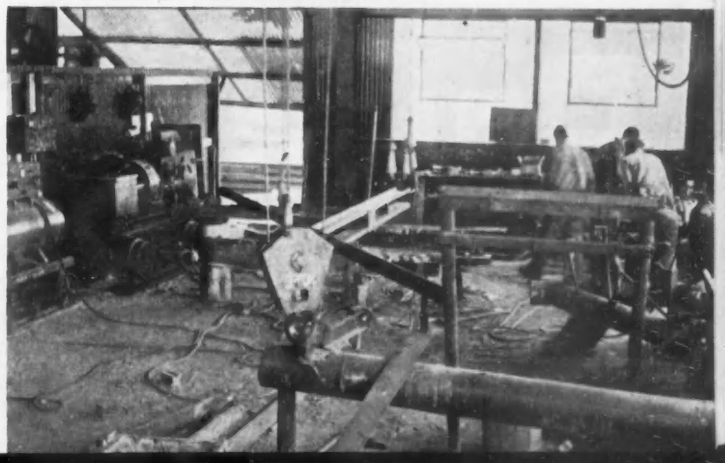
SOUTHWEST TEXAS—This little No. 2 Cable head Jack has been handling all the oil the R. R. Commissioner will let it have—and it's doing it profitably.

VIEW OF OUR PATTERN SHOP—the place where patterns for Texasteel castings are made to careful specifications—one of the reasons why Texasteel equipment is so efficient.

EAST TEXAS—This Jack is used as a "push and pull". Notice the extra base from the right end of the beam. It pushes Well No. 6 and pulls No. 1 for the East Texas operator.

SOUTHWEST TEXAS—This superintendent seems well satisfied with the performance of this Texasteel No. 4 heavy duty swing.

ANOTHER VIEW of our plant—a section of the welding building—the place where all Texasteel frames and members are carefully welded to specifications.



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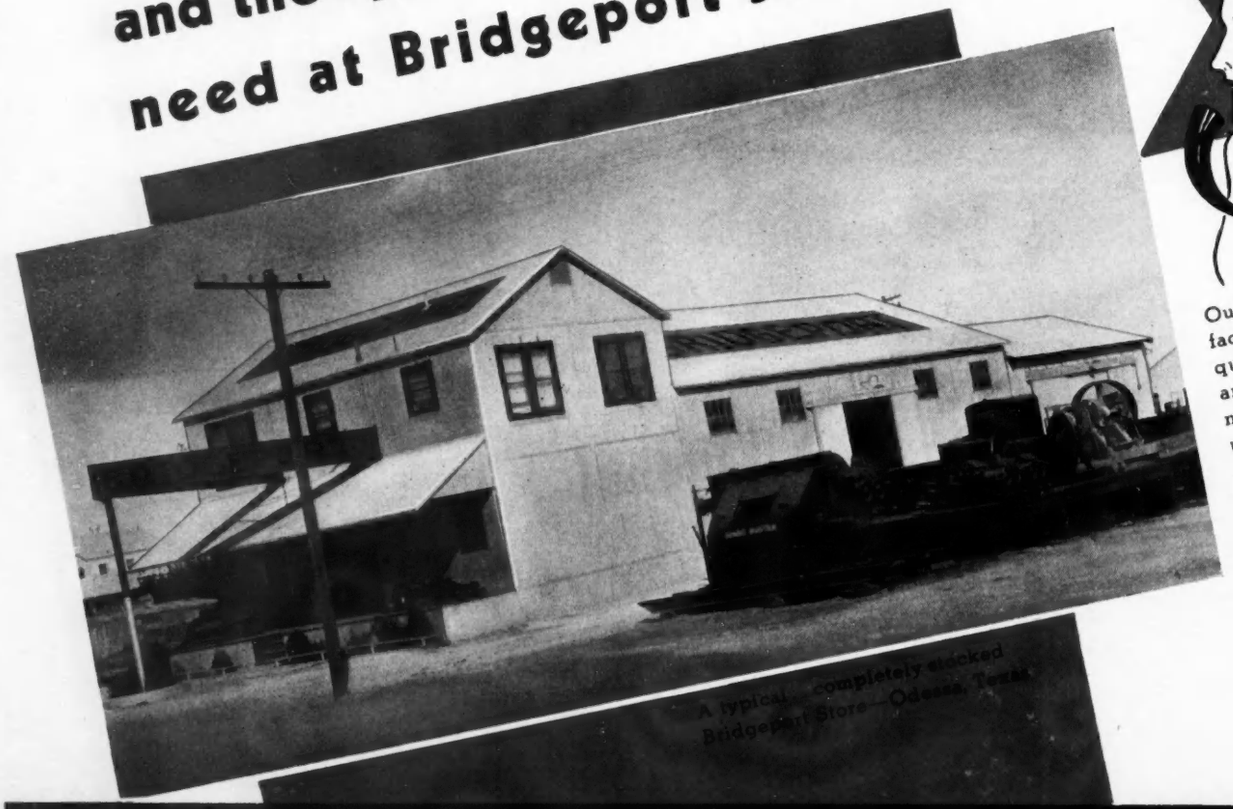

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AND BRANCH STORES

MEN IN THE INDUSTRY'S NEWS

W. F. FLOYD CLINGER, president, Clinger Oil & Gas Company and president of Warren-Forest Oil Producers' Association, was named president of Pennsylvania Grade Crude Oil Association when recently elected directors held their first meeting here last week. He succeeds T. P. Thompson, Jr., of Bradford.

Other new officers are: Parker L. Melvin, president of Towne-Melvin Oil Company, Bardford, vice president; and John A. Beck, president of Pennsylvania Refining Company, Butler, recording secretary. Re-elected were: Fayette B. Dow, Washington, D. C. vice president and general counsel; Samuel Messer, vice president of Quaker State Oil Refining Corporation, treasurer; Walter R. Reitz, secretary of Quaker State Oil Refining Corporation, assistant treasurer; J. E. Moorhead, executive secretary, and S. A. Hartwell, Jr., assistant secretary.

Directors of the organization, elected at the recent annual convention, are: W. J. Healey, of Healey Petroleum Corporation; P. H. Zook, Sloan & Zook Refining Company, Warren; H. A. Logan, United Refining Company, Warren; H. D. Atha, Gordon Oil Company, Logan, Ohio; D. S. McCalmont, producer, Franklin; John McCoy, producer, Columbus, Ohio; R. G. Sonneborn, L. Sonneborn Sons, Inc., New York; E. M. Craig, Freedom Oil Works, Freedom; J. P. Flynn, Ohio Valley Refining Company, St. Marys, W. Virginia; D. J. Sweeney, producer, Buffalo, N. Y.; N. H. Weber, Pure Oil Company, Chicago; S. M. Vockel, Waverly Oil Works Company, Pittsburgh; C. L. Suhr, The Pennzoil Company, Oil City; F. E. Reichart, producer, Wellsville, New York; George Bovaird, producer, Bradford; H. R. Lewis, Conewango Refining Company, Warren; A. D. David, Bradford-Penn Refining Company, Clarendon; D. E. Hoffman, Tide Water Associated Oil Company, New York; E. C. Breene, producer, Oil City; Otto Koch, Kendall Refining Company, Bradford; Charles Huff, producer, Columbus, Ohio; C. R. Daugherty, producer, Butler; W. J. Brundred, Brundred Oil Corporation, Oil City, and Messrs Clinger, Thompson, Dow, Messer, Beck, and Melvin, officers.

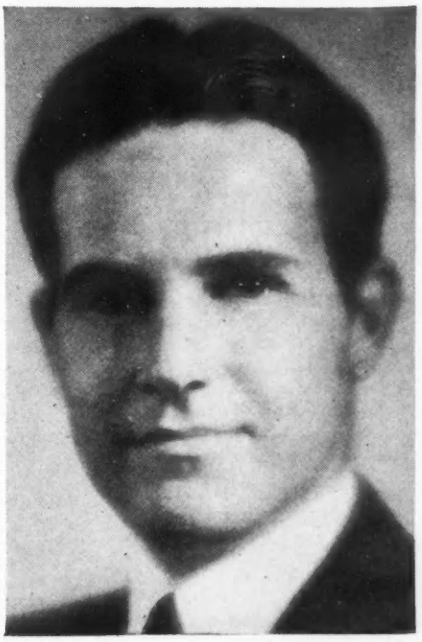
FLORUS R. BAXTER, pioneer in the development of the oil industry and for 51 years with Vacuum Oil Company, has been appointed honorary chairman of the 94th meeting of the American Chemical Society to be held in Rochester, New York, September 6 to 10. Now 80 years old, Baxter retired in 1932. During the World war he was a member of the petroleum board.

HARRY S. CONNELLY, head of Harbar Drilling Company and formerly with Sinclair Prairie Oil Company, and his family have moved from McPherson to Wichita, Kansas.

F. H. MacLEARN, of the Dominion department of mines; Dr. J. O. G. Sanderson, geologist for Home Oil Company, and Dr. T. B. Williams, preparing a report for Canada Empire Crude Oils, Limited, toured the Pouce Coupe field of Alberta, Canada, last week.

J. DAVISS COLLETT, JR., resigned July 16 as assistant engineer of Atlantic Refining Company to open Houston offices as consulting petroleum and production engineer. In addition to routine work of this nature, more specialized services will be offered, particularly bottom-hole pressure surveys, gas-oil ratio tests, evaluation, etc.

Collett, a native of Fort Worth, attended Texas Christian University and received a B.S. degree in Petroleum



—Gittings Studio

J. DAVISS COLLETT, JR.

Engineering from University of Oklahoma. He was first employed by Atlantic Refining Company in 1932, when tests were being conducted of bottom-hole pressures. After receiving wide experience in field work, chiefly in East Texas, he was transferred to the Dallas office of the concern in June, 1935. More recently, he has been in charge of the engineering laboratory.

COL. JUAN GANZO FERNANDEZ, who organized the telephone service in the state of Rio Grande do Sul, Brazil, and later sold it to the American Telegraph and Telephone Company, is one of the directors of the recently organized Ypiranga, S. A., Companhia Brasiliera de Petroleos, a Brazilian concern which will afford a new outlet for a substantial portion of crude oil produced in Peru.

KENNETH G. HOWARD, civil engineer with Mexican Gulf Oil Company at Tampico, Mexico, is spending a vacation in San Antonio, Texas.

JAMES E. DOUGLAS, drilling superintendent of Huasteca Petroleum Company in the Ebano district, State of San Luis Potosi, Mexico, is in the United Sates on a vacation.

DR. G. E. ABERNATHY, on leave from from the Pittsburg, Kansas, State Teachers College; Professor J. Mark Jewett, University of Wichita, and Raymond P. Deroher, former graduate student at the University of Kansas, have been appointed to the Kansas Geological Survey staff, according to Dr. Raymond C. Moore, chairman.

NEWTON WYLIE, Toronto, was elected president of Commonwealth Petroleums, Ltd., succeeding D. J. Young, Calgary, when shareholders held their annual meeting at Calgary last week. Young was named vice president and chairman of the board. Other officers named are S. A. Annand, secretary-treasurer; H. E. Clarry, K. C., assistant secretary, and D. L. Redman, W. H. Honens and L. E. Clarry, K. C., directors.

ARTHUR E. BANKS, representative of Mexican Gulf Oil Company in Mexico City, is spending a vacation with relatives in New Jersey.

HERBERT E. STEVENSON, accounting department, Gulf Oil Corporation at Houston, accompanied by Mrs. Stevenson, who is secretary to A. M. Smith, auditor of Gulf Oil Corporation in Houston, are in New York on a vacation. They will visit Washington and New Orleans on the return trip.

E. H. TRIPHOUSE, Taylor Instrument Company, who has just returned from a nine months' trip through South America, spoke of his experiences before a joint meeting of the Engineers Club of Tulsa and the American Society of Mechanical Engineers at a luncheon held July 12.

DORSEY HAGER, consulting geologist of Houston, left recently for Illinois on a consulting mission.

KRAUS EARHART, safety engineer for The Texas Company at Tulsa, has been transferred to Houston where he will be in charge of safety in all refineries. He left Tulsa July 17.

LELAND W. JONES, Ohio Oil Company geologist in the Edmond district, spoke before a meeting of the Oklahoma City Geological Society July 12 on "Roundness and Shape of Mississippi River Sand."

W. R. MacARTHUR, Calgary, was re-elected president of Model Oils, Limited, when shareholders held their annual meeting in Calgary, Alberta, last week. Other officers named are W. G. Mackay, vice president; T. W. McKee, secretary-treasurer, and C. W. Barber and Harry Groves, directors.

ROBERT WILKINSON, president of National Petroleum Corporation, Limited, returned to Calgary, Alberta, last week from a visit to Toronto and other eastern points. He reported an increasing interest in Alberta oil development in the east.

W. H. BARNEY, G. C. REDFIELD and **H. F. FELLOWS,** all of Rapid City, South Dakota, have organized Western Petroleum, Limited, to engage in oil development.

JOHN H. LANGSTON, chief scout for Sun Oil Company, Dallas, accompanied by his family, is on a vacation trip in the Colorado section of the Rocky Mountains.

I. B. HOWETT, K. C., has been elected president of Ram River Oils, Limited, a concern organized to drill a wildcat on Ram River structure, which is 65 miles west of Red Deer, Alberta, Canada.

W. S. S. RODGERS, New York, president of The Texas Corporation, was in Calgary, Alberta, last week on an inspection tour of properties of The Texas Company of Canada, Limited. He was to extend his trip west to Vancouver before returning to New York.

CHARLES G. DAWES, former vice president of the United States, last week, led a party including his brother, Rufus Dawes, James G. Harbord and Dr. William Pusey, all of Chicago, on an inspection tour of Pure Oil Company properties in the new Clay County field of Illinois.

ORVAL MANNSCHRECK, head of the Kansas land department for Mid-Continent Petroleum Corporation, and E. E. Bickford, Wichita operator, have left with Mrs. Mannschreck and Mrs. Bickford for a vacation in Portland, Oregon.

WALTER J. LARK

HARRY GLOVER, secretary of the Kansas chapter of the American Petroleum Institute since 1932, has resigned as head of the pipe line division of Derby Oil Company at Wichita, Kansas, to become western Kansas representative of the American Manufacturing Company, with headquarters at Ellinwood.

New Field Means Shave!

Walter J. Lark, superintendent of Louisiana Gulf Coast operations for Fohs Oil Company, has two very good reasons for smiling. His company has discovered a new oil field, and he can shave off that beard. Lark made a bargain that he would not shave until Fohs Oil Company and Pilgrim Exploration Company's State Long Lake 1 encountered a showing of oil. It is said the well found a showing at a shallow depth, but due to the desire to keep it quiet Lark could not shave as scouts in the region would know something had been discovered. However, at 9406 feet 30 feet of sand resulted in a commercial well. Then Lark got his "little lark" by getting a good shave.

DIED:

ADRIAN C. ALLEN, 56, widely known in eastern oil fields and for 35 years superintendent of the Bardford field properties of W. B. Miller, Derrick City, died July 7 at Bradford Hospital. Surviving are his wife, four daughters, a son, his father, three brothers and a sister.

HOMER G. CRAIG, a pioneer oil man of Mexico, died July 10 at his home in Tampico, as the result of heart failure. He was a native of Pennsylvania, and upon finishing college 40 years ago, went to Mexico. In 1907 he accepted a position as geologist with Pierson & Company, which later was absorbed by Cia. Mexicana de Petroleo "El Aguila" S.A. Subsequently he held positions as geologist or field superintendent with various oil companies in Mexico and California. At the time of his death he was field superintendent of Compania Explotadora de Petroleo "La Imperial" S.A. Craig was 64 years of age, and is survived by his wife, two sons and a daughter. Interment was at Tampico on July 11.

FREDERICK J. WEBER, pioneer in the piping of natural gas in Ohio, died in Daytona Beach, Florida, July 8 at the age of 77. He laid an 18-mile line from an Ohio field to Upper Sandusky, Carey and Van Lue. He is also credited with inventing the modern grain elevator. Survivors include his wife, Elizabeth Syler Weber, and a nephew, Fred Kindlay, Findlay, Ohio.

WILLIAM F. KAISER, 66, associated with Frick-Reid Supply Company for 24 years and manager of the El Dorado, Kansas, supply house of the company since 1916, died July 3 in El Dorado. Born in Marietta, Ohio, he grew up with the oil industry in the East and came to the Mid-Continent area with the turn of the century. Surviving are his wife, a brother and two sisters.

W. K. WHITE, former operator at Owensboro, Kentucky, died July 5 at Forest Lawn, California. Survivors include his son, Keith White, who is active in Kentucky oil development.

Westex-Newmex Production

[*Continued from Page 94*]

field discoveries included the important Hobbs field, Lea County, as well as the Lea-Lynch and T. & P. State fields, Lea County, and Getty (Twin Hills) field, Eddy County.

Production Jumps in 1930

There were no important discoveries in 1930, but the fields that had been found in 1928 and 1929 were more fully developed, and New Mexico's production jumped to 10,352,373 barrels in 1930, of which more than half came from the Hobbs field. The 1930 production put New Mexico among the major producing districts of the country.

Production continued to increase in 1931, despite the absence of new discoveries, as drilling throughout the country was curtailed. The New Mexico production of 1931 aggregated 15,359,083 barrels.

In 1932, however, the curtailment of drilling and of production on a nationwide basis resulted in a decline of production in New Mexico to 12,446,365 barrels.

New Peak in Prospect

Although drilling remained comparatively small in 1933, New Mexico production turned back upward, rising to 14,174,950 barrels. The rising trend of production that began in 1933 has continued to now, having been stimulated by increased drilling and the resumption of oil field discoveries. The state's output rose to 16,833,321 barrels in 1934, to 20,211,349 barrels in 1935, and to 26,816,609 barrels in 1936. In the first half of 1937, the New Mexico production totaled 18,832,200 barrels, or 64 percent more than in the first six months of 1936, indicating that the state's output will reach a new peak this year.

New Fields Found

The expansion of production in the past few years has been made possible by the finding of several new fields. In 1934, the New Mexico discoveries included the Cooper field, Lea County; in 1935, Carter-Mattix, Jeffers-Langlie, Monument, Skelly-Penrose, and South Eunice fields, all in Lea County; and in 1936, Eaves and Rhoades pools, both in Lea County.

This year has brought a continuation of active drilling in New Mexico. In the first half of the year, completions in the state totaled 349 wells, or 30 percent more than in the similar period last year.

All Markets Strong

PREMIUMS PAID FOR CRUDE HARBINGER ADVANCE IN PRICE

THE OIL industry's markets continue to display rising tendencies, as demand is great, while there are no important excesses of supply at the refineries or at the wells.

The Gasoline market continues to edge toward higher price levels, with inventories declining further, in the face of increasing runs of crude oil through the refineries.

The large requirements of crude oil are causing some refiners to pay premiums in obtaining adequate quantities of the raw material for their plants, and talk of a general advance of crude oil prices has been revived.

Crude Control Effective

The effective restriction of crude oil production within market demand in July, following similar effective control in June, makes higher crude prices seem a distinct possibility.

Increased costs of materials and labor are pointed to as justifying the crude raises that the producers want.

Control May Be Liberalized

The agitation for higher crude prices perhaps will be tempered somewhat, however, by the unsettling implications of developments last week at the Interstate Oil Compact meeting at Santa Fe. Comments of officials of some of the leading producing states on the crude stocks situation indicated that allowables henceforth may be liberalized, and that additions to crude storage may be deliberately permitted.

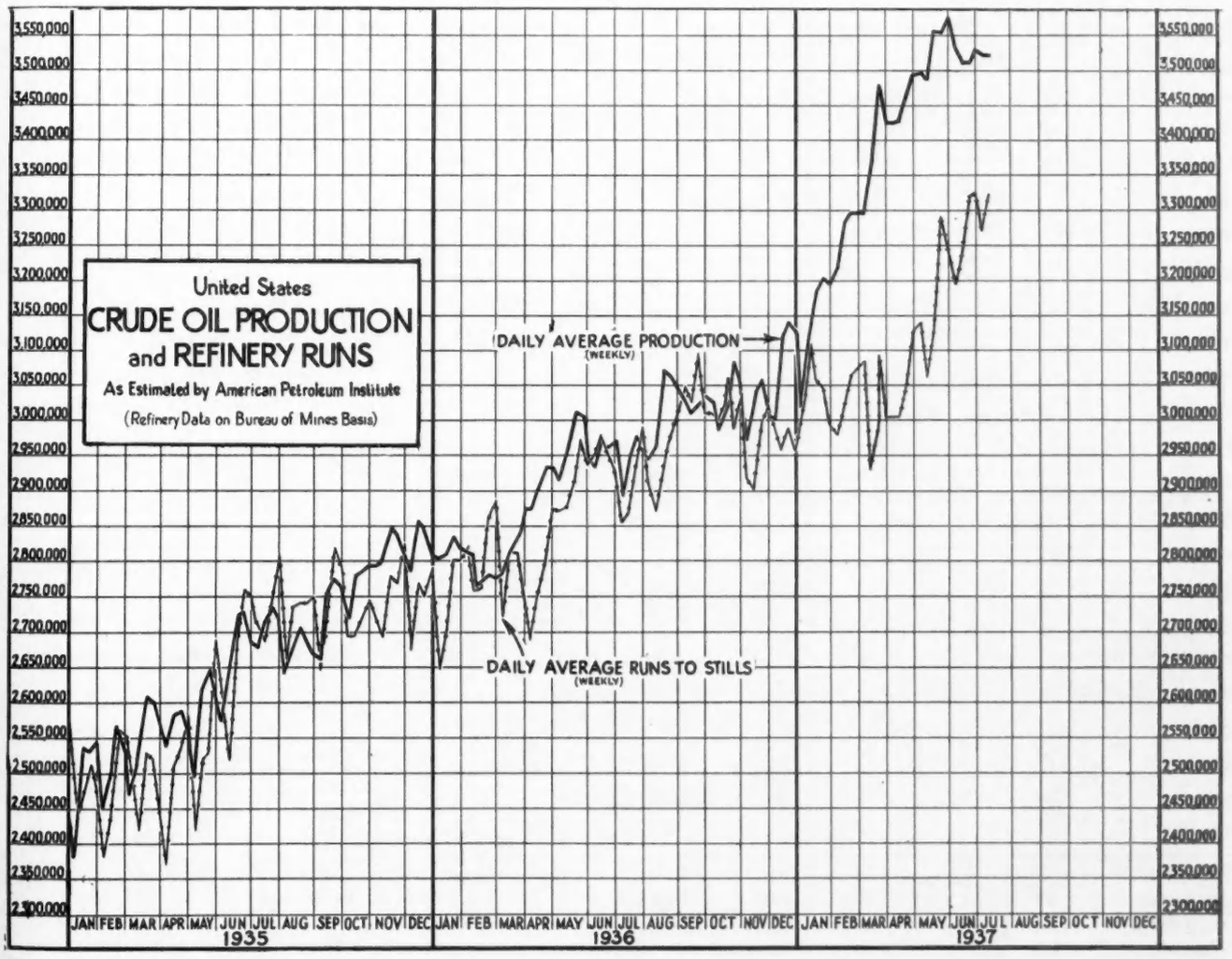
By some of those officials, the recent Bureau of Mines survey of oil storage was interpreted as indicating that inventories may be smaller than advisable. Presumably, such interpretation may result in more liberal allowables and some building up of storage.

Disagreement Over Stocks

However, there is not unanimous agreement that the stocks may be increased materially with safety, and the markets may become unsettled if a more liberal program of allowables actually is adopted.

With stocks at the current levels, the markets have been firm, but prices have remained comparatively low; and it is conceivable that substantially larger inventories might lead to price cutting and to sinking of the price structures of crude as well as refined oils.

Consequently, the markets in the



coming weeks likely will be affected considerably by the policies regarding state allowables.

Gasoline Stocks Moderate

Latest available figures indicate a continuation of the generally favorable conditions in the industry.

Gasoline stocks were reduced 1,354,000 barrels in the week ended July 10, coming down to 73,976,000 barrels. The stocks have been cut down nearly 10,000,000 barrels from the peak reached at the end of March.

The gasoline stocks of 73,976,000 barrels on hand July 10 were 11 percent greater than the 66,646,000 barrels held July 11, 1936. But such an increase in the inventories is justified by the larger demand this year. The federal government estimated that gasoline consumption would be 12 percent higher this month than in July last year.

CRUDE OIL PRICES

Crude oil prices late last week remained the same as shown in The Oil Weekly of July 5, 1937, page 58, with exception of new postings for the Refugio and Mirando districts, South Texas.

The new schedules for the Refugio and Mirando districts, effective July 6, are shown on page 56 of The Oil Weekly, July 12.

Weekly Trends of United States Production and Stocks

(Figures American Petroleum Institute, except Crude Stocks, Bureau of Mines)

WEEK ENDED	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	Gas & Fuel Oil Stocks (Barrels)
January 2, 1937	3,121,400	3,030,000	287,659,000	62,661,000	106,330,000
January 9	3,117,800	3,110,000	286,912,000	65,402,000	105,971,000
January 16	3,184,650	3,045,000	286,044,000	66,559,000	104,841,000
January 23	3,205,150	3,055,000	285,211,000	68,180,000	103,441,000
January 30	3,194,050	2,995,000	285,384,000	69,540,000	102,078,000
February 6	3,220,750	2,980,000	286,116,000	70,535,000	101,136,000
February 13	3,286,050	3,020,000	286,158,000	73,585,000	100,735,000
February 20	3,295,950	3,065,000	287,574,000	74,798,000	99,391,000
February 27	3,296,100	3,085,000	288,121,000	78,786,000	99,534,000
March 6	3,298,800	2,930,000	289,611,000	80,102,000	99,115,000
March 13	3,372,850	2,985,000	290,613,000	81,236,000	98,964,000
March 20	3,448,150	3,095,000	291,555,000	81,623,000	97,287,000
March 27	3,431,300	3,060,000	293,587,000	*83,538,000	96,591,000
April 3	3,422,350	3,005,000	297,374,000	83,157,000	95,805,000
April 10	3,426,300	3,005,000	297,468,000	82,579,000	94,581,000
April 17	3,463,550	3,055,000	298,932,000	82,703,000	94,472,000
April 24	3,496,400	3,125,000	300,737,000	82,303,000	94,100,000
May 1	3,497,450	3,140,000	303,249,000	81,407,000	94,291,000
May 8	3,489,200	3,065,000	304,148,000	81,469,000	94,874,000
May 15	3,551,950	3,135,000	305,365,000	80,378,000	95,316,000
May 22	3,550,450	3,290,000	304,971,000	79,827,000	95,111,000
May 29	*3,573,000	3,245,000	306,445,000	78,758,000	96,139,000
June 5	3,538,150	3,195,000	307,223,000	77,494,000	97,402,000
June 12	3,515,900	3,250,000	307,199,000	76,996,000	98,158,000
June 19	3,510,950	3,320,000	307,465,000	76,574,000	99,215,000
June 26	3,529,600	3,235,000	307,679,000	75,427,000	100,395,000
July 3	3,525,650	3,270,000	308,744,000	75,330,000	101,564,000
July 10, 1937	3,520,750	*3,325,000	.....	73,976,000	103,537,000
July 11, 1936	2,947,700	2,870,000	309,383,000	66,646,000	105,790,000

*All time peak.

Summary of Wells Completed in the United States Week Ending July 17, 1937

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total 1937	Total this Date, 1936
Alabama	....	....	....	....	.....	1	2
Arkansas	4	....	....	4	.....	48	53
California	31	28	....	3	18,330	749	612
Colorado	....	....	....	....	.....	6	6
Florida	....	....	....	....	.....	....	1
Illinois	22	16	....	6	3,362	85	4
Indiana	12	5	1	6	55	70	128
Kansas	55	46	1	8	67,937	1,369	873
Kentucky	19	9	3	7	315	181	137
Louisiana	19	14	2	3	4,806	459	565
Michigan	14	11	1	2	5,070	477	421
Mississippi	....	....	....	....	.....	6	5
Montana	16	11	....	5	898	92	74
Nebraska	....	....	....	....	.....	....	....
New Mexico	11	10	....	1	7,367	381	313
New York	....	....	....	....	.....	6	....
Ohio	27	8	10	9	196	784	1,046
Oklahoma	65	49	5	11	56,308	1,756	1,593
Pennsylvania	7	4	3	....	23	97	....
Texas	287	214	14	59	361,068	8,147	6,737
Utah	....	....	....	....	.....	....	....
West Virginia	13	1	12	....	5	474	385
Wyoming	4	3	....	1	1,503	57	33
Total this week	606	429	52	125	527,243	15,245	13,018
Total last week	677	459	51	167	517,815	....	.....
Total this year	15,245	10,545	1,227	3,473	12,833,965	....	.....

The largest contribution to the 1,354,000-barrel decline in gasoline stocks in the week ended July 10 was that of 457,000 barrels in the East Coast district. California inventories were down 246,000 barrels.

Crude Runs at New Peak

The decline in gasoline stocks occurred despite continued expansion of refinery operations. In the week ended July 10, crude runs to stills increased 55,000 barrels daily, after having risen 35,000 barrels a day in the preceding week, pushing the average up to 3,325,000 barrels daily, a new all-time peak.

Crude Stocks Up

Crude oil stocks have continued to increase moderately, having reached 308,744,000 barrels in the week ended July 3, through a gain of 1,065,000 barrels in the 7-day period. The stocks at the new level were about 1,500,000 barrels larger than on June 5. Such an increase for June represents a favorable contrast with results in the four preceding months, when large additions to crude storage were occurring.

The 308,744,000 barrels of crude oil on hand July 3 represented approximately the same supply as that held one year previously. The present inventories consequently are smaller, in terms of demand, than those of a year ago, since petroleum consumption is running over 10 percent higher this year than last year.

Fuel Oil Stocks Up

Stocks of gas and fuel oil increased 1,973,000 barrels in the week ended July 10, rising to 103,537,000 barrels, as the output of the refineries was exceptionally large. The inventories of these oils remained, however, lower than a year before, as they totaled 105,790,000 barrels on July 11, 1936.

Fuel oil prices remain firm, aided by favorable inventory situation.

But kerosene tank car prices at Mid-Continent refineries have declined ⅛ cent a gallon within the past 10 days.

Gasoline Prices Raised

The gasoline market displayed strength last week, when several major companies, including Standard Oil Company of New Jersey and Gulf Oil Corporation, increased tank wagon prices to dealers ½ cent a gallon, effective July 12, in the eastern part of the United States. The companies also increased tank car prices the same amount.

Comparison of Permits Granted for New Wells

STATE	Week Ending July 17	Total this Mo.	Total this Year	Total this Date Last Year	1936 Year Total
Arkansas	4	20	116	52	103
California	21	74	846	544	1,054
Louisiana	....	63	663	643	1,107
Kansas	39	153	1,450	966	1,873
Michigan	10	39	532	398	762
Oklahoma	37	188	1,664	1,621	2,594
Texas	359	1,001	9,966	8,152	15,582
Total	470	1,538	15,237	12,376	23,075

Close to Peak

UNITED STATES PRODUCTION SHOWS GAIN DURING WEEK

UNITED STATES crude oil production rose during the past week, ended July 17, to a slightly higher level than in the previous week, averaging 3,542,850 barrels daily.

That was 8975 barrels a day more than in the week ended July 10, and was 119,050 barrels a day more than the Bureau of Mines estimate of average daily market requirements for July.

At last week's level, the production was well up toward the all-time peak that was reached in the week ended May 29, when output averaged 3,573,000 barrels daily.

Last week's increase in production resulted primarily from gains in Oklahoma and Kansas, although New Mexico also showed a slight increase. The advances for those states outweighed declines in California, Louisiana and Texas.

Oklahoma last week averaged 630,900 barrels daily, or 12,400 barrels a day more than in the previous week and 1200 barrels a day more than the Bureau of Mines estimate of demand.

Kansas production was up 5275 barrels at 197,450 daily, which was 1850 barrels a day more than the federal government suggestion.

New Mexico output was 100 barrels higher than in the previous week in averaging 114,400 barrels, 13,600 more than the recommendation.

California last week averaged 662,000 barrels daily, or 4,000 barrels a day less than in the previous week, and thus showed an excess of 56,500 barrels daily over the indicated demand.

Louisiana produced at the average rate of 253,050 barrels daily, 3750 less than in the previous week, and 50 barrels a day above the demand.

Texas output was off 2,000 barrels, averaging 1,419,800 barrels a day, or 44,700 barrels a day more than the recommendation.

MEET CRUDE RAISE

The new crude oil price postings recently established in Mirando and Refugio districts, South Texas, involving increases for the heavier oils, have been met generally.

Crude Oil Marketing & Trading Company, purchaser of Mirando crude and Saxet Heights crude, through the Crude Oil Pipe Line Company, Driscoll Pipe Line, and Saxet Heights Pipe Line Company, has met the advances of Mirando and Saxet crudes as posted by Humble Oil & Refining Company, Magnolia Petroleum Company, and The Texas Company, retroactive to July 6.

Valley Pipe Line Company has increased postings on Samfordyce field crude to conform with the Humble and Magnolia schedules for Mirando grade crude. The company moves crude from the field to Coastal Refining Company's plant at Port Isabel, on the coast.

STIMULATE EXPORTS

Stimulation of oil exports is a feature of the foreign commerce bank Mexico's federal government has organized at Mexico City with a capital of 20,000,000 pesos (about $5,600,000), subscribed by the ministry of finance and several official and private banks.

United States Crude Oil Production

Estimates Compiled by The OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Recommendation (Daily in July)	ACTUAL PRODUCTION: BARRELS DAILY FOR WEEK ENDING July 17	July 3
TEXAS—			
Texas Panhandle	.....	77,200	79,100
North Texas	.....	72,800	72,300
West Central Texas	.....	33,900	33,500
West Texas	.....	198,900	198,400
East Central Texas	.....	122,200	128,600
East Texas Field	.....	468,600	467,300
South Texas	.....	237,300	238,700
Texas Gulf Coast	.....	208,900	203,800
Total Texas	1,375,100	1,419,800	1,421,700
OKLAHOMA—			
Oklahoma City	.....	144,775	149,150
Seminole Area	.....	126,400	118,250
Crescent	.....	11,750	9,725
Lucien	.....	15,900	15,900
Fitts	.....	95,650	85,450
Edmund	.....	18,600	18,500
Moore	.....	10,750	10,250
Others	.....	207,075	211,275
Total Oklahoma	629,700	630,900	618,500
KANSAS—			
Ritz-Canton	.....	5,750	5,600
Chase	.....	7,525	7,375
Hollow-Nikkel	.....	3,050	2,850
Sedgwick	.....	4,025	4,275
Burrton	.....	13,950	14,800
Lorraine	.....	4,350	4,250
Russell County	.....	32,025	30,500
Silica	.....	21,200	18,875
Others	.....	105,575	103,650
Total Kansas	195,600	197,450	192,175
LOUISIANA—			
North Louisiana	.....	84,350	82,700
South Louisiana	.....	168,700	174,100
Total Louisiana	253,000	253,050	256,800
ARKANSAS	28,400	29,250	29,200
CALIFORNIA—			
Long Beach	.....	59,500	60,000
Santa Fe Springs	.....	43,500	44,500
Huntington Beach	.....	37,500	38,000
Dominguez	.....	27,500	26,000
Inglewood	.....	17,500	16,000
Ventura Avenue	.....	33,000	35,500
Seal Beach	.....	9,000	8,500
Midway-Sunset	.....	75,500	78,000
Elwood	.....	8,500	8,500
Kettleman Hills	.....	78,500	80,000
Mountain View	.....	18,500	18,500
Playa del Rey	.....	8,500	8,500
Wilmington	.....	49,000	42,000
Others	.....	196,000	202,000
Total California	605,500	662,000	666,000
MOUNTAIN STATES—			
Wyoming	52,900	51,200	48,800
Montana	16,200	17,800	17,300
Colorado	4,700	4,300	4,400
Total Rocky Mountain States	73,800	73,300	70,500
NEW MEXICO	100,800	114,400	114,300
EASTERN STATES	122,100	119,800	121,800
MICHIGAN	39,800	42,900	42,900
Total United States	3,423,800	3,542,850	3,533,875

WORLD DEVELOPMENT and TECHNOLOGY

Edited by
WM. V. GROSS, Associate Editor

Pressure Drops

THREE TURNER VALLEY TESTS ENTER MADISON LIMESTONE

GAS pressure at Turner Valley, Alberta, Canada, wells declined heavily during the past year, tests of the petroleum and natural gas division of the department of lands and mines reveal. The tests were made in June, 1936, and June, 1937.

Heaviest pressure of all wells was registered at Highwood-Sarcee Oils, Ltd.'s No. 2, which showed a closed-in pressure of 1130 pounds to the square inch. Greatest drop was registered at the Union Drilling-Freehold well, which declined from 1420 pounds to 1080 pounds, a drop of 340 pounds.

Several wells producing large volumes of crude were not tested because the column of fluid in the hole would not permit an accurate report.

Three In Lime

Royalite Oil Company's Sterling-Pacific 5 encountered Madison lime last week at 6610 feet, bringing to three the tests now in the producing formation in Turner Valley. Monarch Royalties was drilling below 6658 feet, 133 feet in the lime which was encountered at 6525 feet. Casing was set on top of the lime. Richland Oil Company's No. 3 resumed drilling at 5615 feet, five feet below the top of the lime where casing was cemented last week.

Thirty-eight tests are active in Turner Valley field.

Acid treatment continues to command attention. Production at Advance Oil Company's 5A, treated last week, was boosted from 40 barrels daily to about 102 barrels settled. The second treatment given Westside Royalties test upped production from 400 barrels to 488 barrels daily, well over double the 225-barrel yield before the first treatment was given a month ago. Model Oils No. 1, pioneer crude well on the northwest flank which has been producing from 130 to 150 barrels of crude daily since its completion in 1930, is now yielding 155 barrels, a 25-barrel increase over production before the treatment. William C. Fisher, managing director, said another acid treatment may be given.

To Test Ram River Structure

Announcement of a wildcat on the Ram River structure, 10 miles southeast of Saunders and 65 miles west of Red Deer, was made by Ram River Oils, Ltd., with drilling to be started within two or three months on a site to be chosen by Russell V. Johnson, geologist. The structure, 30 miles in length, was discovered by Nicholas Haan, a prospector, in June, 1936, and since has been the scene of considerable filing activity. Geological reports indicate the Madison limestone extends the entire length of the structure. Ram River No. 1 will be located on the north end of the uplift, where the company controls 3200 acres, and will be drilled to 5000 feet if necessary. Officers of the company are I. B. Howatt, G. C., president; A. E. Aitken, vice president; F. D. Perry, secretary-treasurer, and S. W. Williamson, Charles Short, Fred Wailing and Bruce D. Howatt, directors.

To Attempt Extension

Okalta Oils, Ltd., was scheduled to spud a test this week on Legal Subdivision 3, Section 30, Township 18, a location that will materially extend the field in west Turner Valley if commercial production is obtained.

On the Taber structure, derrick, shed, engine room, engine and machinery of Plains Petroleums' No. 2 were totally destroyed when the gas flow estimated at a million cubic feet daily ignited. The well was drilling below 2000 feet, with productive levels not far distant. The company's No. 1 yielded commercial production in spite of water intrusion. Cement is to be poured into No. 1 in an effort to shut off the water and the hole will be carried down another 70 feet. No. 3 was to be spudded this week, and derrick material is being moved to locations for No. 4 and No. 5.

Drilling On Nineteen Structures

In addition to the Plains Petroleums tests, 24 others were active on 19 West Canadian structures, exclusive of Turner Valley: On Birch Ridge, Elbow Oil Company, drilling at 5165 feet; on Calling Valley, Anglo-Indian Oils Corporation, building derrick; Sentinel Oils, resuming from 5850 feet; on Cardston, Franco Oils, drilling from 3600 feet; on Del Bonita, Sunshine Oils, cemented at 5252 feet; Terminal Oil Company, testing at 5112 feet; on De Winton, Marquis Oil Company, resuming from 4500 feet; on Duncan, Spindletop Oils, drilling at 390 feet; on High River-Aldersyde, Ranchmen's Gas & Oil Company, drilling at 7153 feet; on Highwood-Sinclair, Banner Oils, drilling at 2800 feet; South End Petroleums, drilling at 4685 feet; on Hunter Valley, Hunter Valley Oil Company, drilling at 8037 feet; on Kootenay Dome, Roxana Petroleums, drilling at 2935 feet; on Lethbridge, Lethbridge Petroleums, drilling at 1150 feet; on Moose Dome, Moose Oils, drilling at 1220 feet; on New Valley, New Valley Oil Company, drilling at 8082 feet; on Pincher Creek, Weymarn Petroleums No. 2, bailing at 5960 feet; on Steveville, Anaconda Oil Company, drilling at 150 feet; on Twin River, Del Bonita Associated Oils, rigging at 3990 feet; on Wainwright, Altoba Oils, erecting derrick; Battleview Oils, drilling at 1300 feet; on Waterton, Oil City Royalties, waiting at 2565 feet; on Watson Structure, Mar John Oil Company, drilling at 5525 feet; Mar Jon-Maxmont Syndicate, drilling, no depth reported.

INCREASE INDICATED

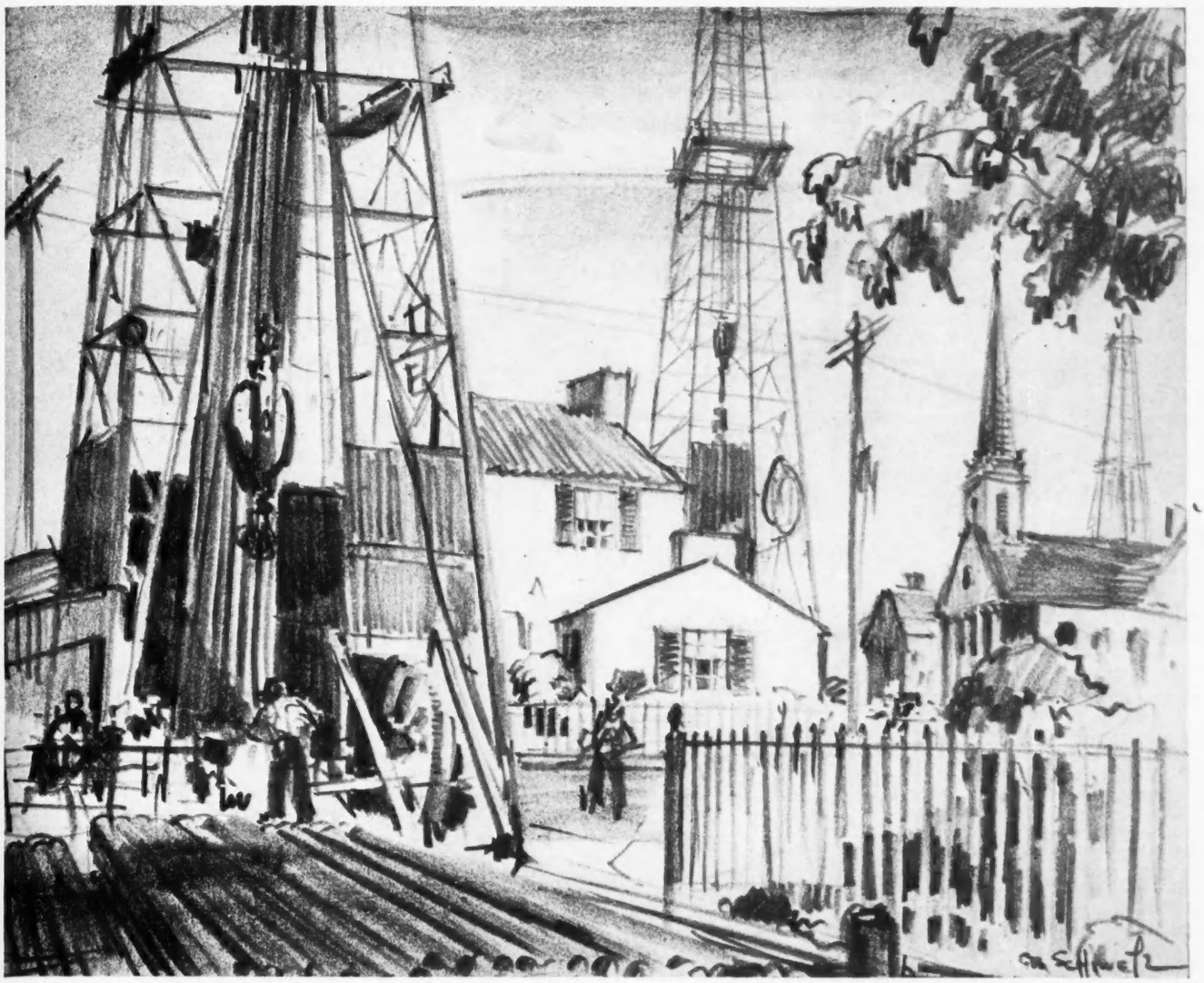
Venezuela's production in May reaches high

An increase of 4,372,674 barrels in 1937 production over the 155,228,982 barrels produced in Venezuela in 1936 is indicated on the basis of returns for the first five months production there.

May's production in Venezuela reached an all-time high, recovery of 15,318,228 barrels being recorded for the month. This brought the total oil recovered in Venezuela during the first five months of 1937 up to 66,500,689 barrels, which is nearly 2,000,000 barrels more than the 64,520,616 barrels produced in the corresponding period of 1936.

Lago Leading All

Lago Petroleum Corporation continues to lead all Venezuela producers, having accumulated a total production of 22,315,822 barrels thus far this year. Its production in May, 5,083,894 barrels, was nearly one third of that of the nation. Venezuelan Oil Concessions was second with a May production totaling 3,973,720 barrels, bringing that company's total for the year up to 16,384,768 barrels. Creole Petroleum Corpora-



TOWNSITE LOCATION

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tion took third place with a May production of 2,797,398 barrels, giving it a total for the first five months of 13,800,974 barrels. May production of the three foregoing organizations represents a substantial increase over their respective production figures for May of last year, as does the Gulf Oil Corporation figure of 1,872,331 barrels for May of this year, according to O'Shaughnessy's Oil Bulletin.

51 Completions

Venezuelan field activities, represented in the table of well completions, were also up in May, 51 wells having been completed during the month as against 47 in April. Of the completions, Lago reported 12 in LaRosa-Ambrosio field having a combined initial of better than 12,000 barrels. Venezuelan Oil Concessions reported in May four completions at Lagunillas and 12 at La-Rosa-Ambrosio, their combined initials totaling 7787 barrels.

RUSSIA'S QUOTA

Must produce 17.6 percent more oil in 1937

As the second half of the year gets into full swing, considerable interest will be shown in whether Russia will be able to meet the quota of 225,120,000 barrels of crude production set as the "Plan" for 1937. While authentic information is not available from the Soviet Union for the first six months of the year, it is understood some of the oil trusts are not meeting their respective quotas, due to various reasons, mainly operating problems.

The goal of 225,120,000 barrels, if realized, will constitute an increase of 17.6 percent over the reported production of 191,380,000 barrels in 1936. Considering the age of the petroleum industry in Russia, that is, that the country has had available for a number of years modern methods and instruments for prospecting and has not on the whole been able to realize previous production quotas set by the governing bodies, the goal of 17.6 percent gain in output would seem a little too high to realize. Granting that a number of new fields have been found, which undoubtedly is the case, the production and drilling organizations of the oil trusts apparently have failed to get the oil out of the ground fast enough and to keep it coming fast enough to meet the quotas, it is said.

The accompanying table shows production in the main Russian districts for the past two years and quotas set for each of those districts for 1937.

Exploitation drilling, according to the quota set, must be increased from 1,420,000 meters in 1936 to 2,100,000 meters in 1937.

NEW PERU OUTLET

Brazilian refinery to take Lobitos crude

A new outlet for a substantial portion of crude produced in Peru by Lobitos Oil Company will be afforded if Ypiranga, S. A., Companhia Brasiliera de Petroleos' refinery in Rio Grande, Brazil, begins operations in late July, according to schedule.

Guy W. Ray of Porto Alegre, Brazil, tells the state department in Washington that existence of a three-year crude contract between the two companies is reported. An initial shipment of 10,000 tons of crude from Peru was expected daily in Rio Grande when he wrote.

Starting with a run of 2000 tons of gasoline per month, plans of the Rio Grande concern call for an output of 5000 tons per month when all units of the refinery are completed.

OUTLOOK BRIGHTER

General strike in Mexico not likely for long time

Certain sentiments developed by Mexican oil industry workers following settlement of the last general oil industry strike there, the one which lasted from May 28 to June 9, will have a tendency to make it much more difficult for labor leaders or agitators to swing the next strike, according to some students of the labor situation there. Apparently, some of the workers are getting tired of agitators' golden promises that are not kept, it is said, while others have known all along when they were well off, but were more or less forced to swing with the tide.

In this connection, THE OIL WEEKLY'S mail from Mexico during the week brought a personal letter from one of the workers which contained the following interesting paragraph:

"The labor troubles here are quiescent at present and nobody looks for anything serious to happen for some time to come. After the last strike—which lasted from May 28 to June 9, inclusive, for which period the laborers did not receive a single *centavo* in *sueldas caidas* (strike pay)—it has had the effect of sobering up the ringleaders and creating a vast amount of discontent and unrest among the workers, as they feel as though they have received a raw deal or had one slipped over on them by the leaders. Ninety-five percent of the Mexican laborers are perfectly satisfied. They know the American companies pay them well, and above all, they pay them when their wages or salaries are due, and not two or three months afterwards.

MEXICO'S RULINGS

Concession holders to pay new type royalty

All companies and individuals who hold concessions to Mexican subsoil for oil exploitation must perform regular and efficient work on the property and pay the federal government royalties that correspond to such operations in order to retain their franchises, Mexico's ministry of national economy has ordered. This action is based upon a federal constitutional provision which demands uninterrupted and efficient work and payment of royalties to the government for oil lands concessions.

New Law Interpretation

A new interpretation of the oil law with regard to obtaining confirmation of concessions received prior to May 1, 1917, when the new federal constitution became effective, was rendered by Mexico's national supreme court in denying heirs of Ricardo Garces an injunction against the ministry of national economy refusing to recognize Garces rights to Lot 25, Asuncion municipality, and Lots 43, 48, and 81, Tuxpan municipality, Vera Cruz state, that were obtained before May 1, 1917.

The high court held that it is erroneous to conclude that in order to obtain confirmation of oil exploitation rights acquired before the new constitution went into effect, all that is necessary is to present proof of such rights. In order to receive such confirmation it is necessary to afford proof of rights to the surface of the oil property, the court held.

One Man's Opinion

One oil man in Mexico, writing THE OIL WEEKLY with reference to the above developments, July 12 stated:

"The situation here has become even more complicated and difficult as a consequence of the announced purpose of the government to exact royalties and regular works requirements under all concessions, both confirmatory and ordinary, already issued or that may be issued in the future. Both legal and economic considerations of the most serious importance are involved and, coupled with the industry's far from settled labor problem, it is hard to say just where this will lead."

CANCEL STRIKE

Workers of the Huasteca Petroleum Company's Cerro Azul unit, near Tampico, Mexico, cancelled a strike threat and accepted arbitration of their differences.

U. S. S. R. Production Figures and Quotas

(Barrels of 42 Gallons Each)

FIELD	Produced in 1935	Produced in 1936	Quota for 1937	Percent Increase
Azerbaidzhan	144,984,000	155,498,000	171,570,000	10.3
Bashkiria	2,842,000	6,776,000	12,110,000	78.7
Central Asia	1,141,000	2,310,000	6,265,000	171.2
Emba	1,939,000	3,290,000	4,865,000	47.9
Grozny	22,967,000	23,996,000	29,400,000	22.5
Kama district	56,000	63,000	490,000	677.8
Maikop	9,338,000	8,120,000	10,780,000	32.7
Sakhalin	1,673,000	2,156,000	2,520,000	16.9
Turkmenistan	2,352,000	2,170,000	3,500,000	61.3
Total crude oil, excluding gas	175,896,000	191,380,000	225,120,000	17.6

(Converted from metric tons on the basis of seven barrels to the ton.)

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Proration Matters

[*Continued from page 30*]

than 40 acres shall be a fractional proration unit. No unit shall have a length more than twice its width and shall be rectangular in shape."

The allowable is based on acreage plus potential with 50 percent allocated on each factor. The potential is determined by a 24-hour open flow test. The rules provide for a maximum gas-oil ration of 5000/1 and requires that wells with an excessive gas-oil ratio be placed on a total displacement factor.

Yates Field Rules—Smith Sand

Ten-acre spacing for wells drilled to the Smith sand in the Yates field, Pecos County, was provided in the rules issued. This permits wells to be drilled 330 feet from lease lines and 660 feet apart. Surface casing must be set at least 200 feet below the top of the clastic series. The oil string must be set no higher than the top of the producing horizon.

Oakville Field Rules

Wells in the Oakville field, Live Oak County, may be drilled 330 feet from lease lines and 660 feet apart, in the center of 10-acre units. The regulations require 250 feet of surface casing cemented back to the surface and an oil string set no higher than the gas-oil contact. All free gas horizons must be cased off. The commission requires 10-pound mud when drilling below the plug, with viscosity ranging from 28 to 42 seconds.

Waddell Field Rules

The order provided for the Waddell field in Crane County requires wells to be drilled at least 440 feet from lease lines and 880 feet apart. The rules call for 750 feet of surface casing set with 100 sacks of cement and the oil string must be set at least 150 feet below the top of the lime in order to case off all free gas.

The allowable is fixed on marginal plus potential. Potential is determined by six-hour open flow test with the last three hours used as a factor. A maximum gas-oil ratio of 2000/1 has been fixed and wells with excessive ratios must be placed on a total displacement factor.

Sulphur Bluff Field Rules

Allowables in the Sulphur Bluff field, in Hopkins County, are fixed on acreage plus potential in an order which the commission issued. Fifty percent is allocated on each factor.

The commission rules permit potential tests on pumping wells to be taken through 2½-inch tubing for a four-hour period. Flowing wells are tested for 25 hours through a ¼-inch positive choke six inches long and of uniform diameter.

Ten acres may be assigned to each well, or in the event of a fractional unit, as much as 15 acres to the final well on the lease.

Colmena Rules Issued

Ten-acre spacing is provided in a temporary spacing rule for the Colmena field in Duval County. This will allow wells to be drilled 330 feet from lease lines and 660 feet apart.

This order is to remain in effect for 15 days from July 12 and a hearing is scheduled for July 23 at Austin at which evidence will be taken upon which to base permanent regulations.

Texas Hearings Set

A hearing on the North Sweden field in Duval County has been set for July 20 at Austin by the Texas Railroad Commission.

On July 23 the Railroad Commission will hold a hearing on the Colmena field in Duval County.

At these hearings the commission will consider rules for the spacing, drilling, completion and operation of wells in these fields.

Economic Notes

[*Continued from page 30*]

so used it would have yielded probably not more than 100,000,000 barrels, or about one-fourth of our domestic demand and would have necessitated the finding of a market for at least 280,000,000 tons of low-temperature coke. "It seems obvious that no substantial supplement to our supply of petroleum from this source will be available during the next ten years, the report commented.

In the field of hydrogenation of coal, although work on the process has been in progress for 23 years, there are less than half a dozen commercial plants operating today, and all are maintained by government aid in countries having to import most or all their petroleum products. Each gallon of motor fuel produced from coal costs approximately three times as much as a gallon of imported motor fuel manufactured from petroleum.

Alcohol can be used as a fuel, but the result of experiments so far has been to increase the cost of motor fuel by 300 to 1000 percent. However, the committee warned, "since alcohol is a serviceable fuel, we may anticipate the development of processes that will decrease the cost of producing oil and it will probably be used to supplement gasoline should the need arise."

Of all the substitutes, oil shale appears to offer the best possibilities. "There is more potential motor fuel in oil shales in this country than will ever be produced from the oil fields of the United States, but only so much is commercially available as can be produced at a cost that will justify its use." At the moment, the committee added, this amounts to zero.

"Looking ahead, we may anticipate no great industrial development of petroleum substitutes in this country during the next 10 years, but may expect a steady increase of experimental and semi-commercial work looking toward the utilization of substitute materials when economic conditions warrant. The increase in cost which the substitutes imply reinforces the case for conserving our supplies of petroleum by avoidance of preventable waste."

The report pointed out important advances in technique for drilling, completing, discovering and producing oil field, along with similar advancements in the refining and transportation divisions of the oil industry.

After pointing out the changes in equipment, practices and methods in these fields, the report declared, "The trend is toward more scientific operation. We may say that the possibilities of applied science in the field of oil and gas production are just beginning to be appreciated, and may predict that the scientific attack will be intensified. It should lead to the employment of more technically trained men, both in the field and in the laboratory, and also should demand an increase in unskilled labor due to the development of new practices.

Bureau Reports Oil Recovery

Complete recovery of the domestic petroleum industry from depression is evidenced by the fact that volume of both production and consumption last year exceeded all previous records, it was reported July 18 to Secretary of the Interior Harold L. Ickes, by the Bureau of Mines. Pointing out that steadily mounting figures of mineral production show that the important mineral industries are contributing their part to the general recovery movement, the bureau explained that the trend of demand for oil products has been steadily upward since 1932 and available data for the early months of 1937 indicate that many new records will be established during the year.

Figures cited by the bureau show that the total domestic demand for all oil fell from 940,000,000 barrels in 1929 to 835,000,000 barrels in 1932, but rose to 1,093,000,000 barrels in 1936. Export demand has increased from 103,000,000 barrels in 1932 to 130,000,000 barrels in 1936. Although the latter figure is still below that of 1929.

"The production of crude petroleum set an all-time record of approximately 1,099,000,000 barrels in 1936, an increase of 102,000,000 barrels over 1935 and 92,000,000 barrels in excess of the previous peak in 1929," the bureau reported. The average value of crude petroleum at the wells rose from 67 cents per barrel in 1933 to about $1.05 per barrel in 1936; the total value increased from $608,000,000 in 1933 to about $1,150,000,000 in 1936. A gain of 89 percent.

"The growth in the domestic demand for motor fuel is an outstanding factor," the report explained. "This demand has increased from 374,000,000 barrels in 1932 to about 482,000,000 barrels in 1936. The first four months of 1937 show a further increase of 11 percent over the corresponding period in 1936.

"Data on relative employment in the petroleum industry in 1933 and 1936, are fragmentary, but studies of the bureau of mines, based on 1935 figures, indicate a gain in wage earners, outside of marketing, of 27 percent during that period.

"The increasing demand for petroleum products is evidence of the indispensable position that petroleum has come to occupy in our national economy and it has been a material factor in return of prosperity," the report stated.

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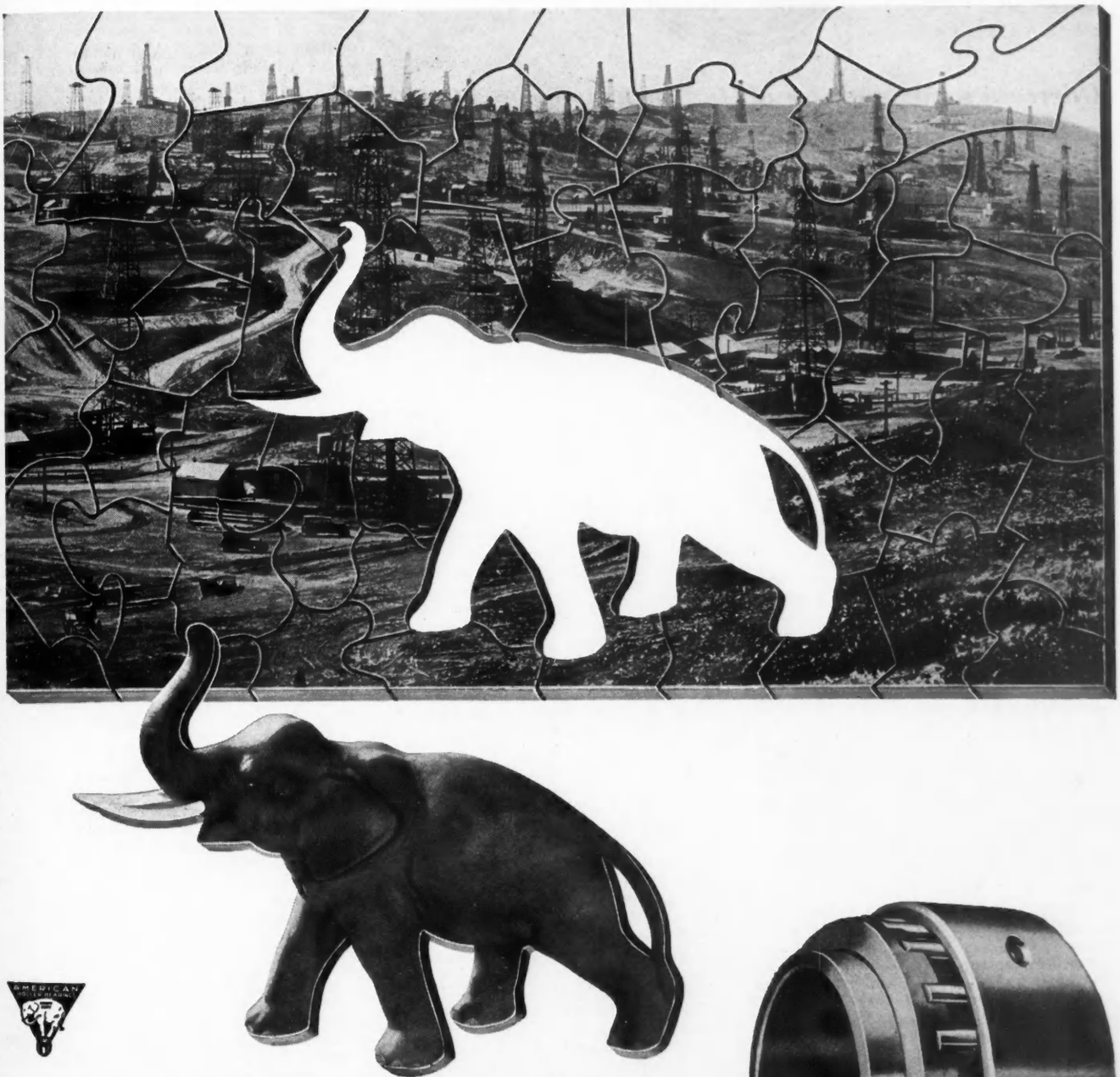

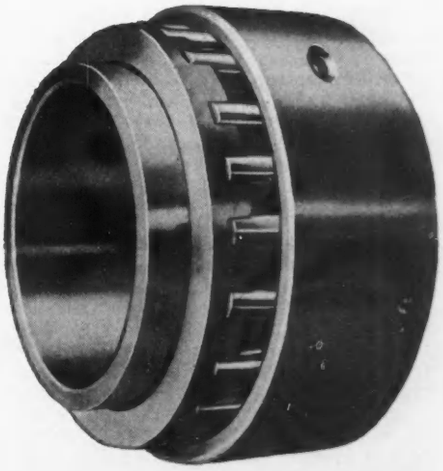

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Water blights hopes of Dutcher sand production.

* * *

Bud Lewis will drill wildcat in Beckham County.

Tulsa. — The past week was what some operators in the Mid-Continent term a "hard lime week." However, despite the fact that activity continued at a low ebb, headway was being made at some of the more interesting wildcat ventures in this sector, and a new producing horizon was uncovered in northern Seminole County. A small producing area west of Tulsa was being watched with much interest, and over in Okfuskee County prospective production from the Dutcher sand went to water.

The new horizon was discovered by Wrightsman Petroleum Company's Taylor 1, SE SW NE 35-10n-7e, in the North Bethel pool of Seminole County. It gauged 150 barrels of oil an hour from the Gilcrease sand at 3570 feet. The formation was found between 3560 and 3585 feet and when the plug was drilled, the well made 170 barrels of oil in one hour. When opened later it made 65 barrels of oil in 15 minutes and had 4,000,000 cubic feet of gas. Tubing was to be run and an official test made. In order to prevent water encroachment, the flow was pinched back.

The well is on the southwest edge of the pool which has been confined to Cromwell sand production since its discovery in 1936.

Carter Oil Company et al's Hamilton 1, CWL NE SW 33-4n-9e, in the Citra area of Hughes County, swabbed and flowed 17 barrels of oil and 1½ barrels of water in 4½ hours and was to run tubing and acidize. It was at a plug-back depth of 6008 feet, having originally drilled to 6177 feet.

Amerada Gets Good Well

In the Adams area of northwestern Hughes County, Amerada Petroleum Corporation et al's Chapman 1-A, SE NW NW 31-9n-9e, topped the Misener sand at 4049 feet and drilled to 4053 feet. Seven-inch casing was run to 4050 feet and the plug drilled. When the hole was bailed down from 1500 feet, it made 400 barrels of oil net in 3½ hours, with 3,500,000 cubic feet of gas. It was shut in, lacking an outlet.

Importance of the small producing area west of Tulsa, known as Wheatley pool, at Hale station, took on added importance last week as announcement was made that a well will be drilled to the Wilcox sand. The Wilcox test, Dan O'Shea's City of Tulsa 1, was prompted by the success of Wheatley Brothers' Sand Springs Home 2, SEc 4-19n-12e, which came in as a combination oil and gas well. City of Tulsa 1 had about 900,000 cubic feet of gas in the Bartlesville sand, and when drilled ahead to the Burgess sand, encountered water. The gas had disappeared when the well plugged back.

New Pool West of Airport

Meanwhile, west of Airport, Cowan & Lebow's Blackmore 1, NEc NW 3-19n-13e, about ¼-mile due west of the pool proper, was drilling below 1457 feet in Burgess sand. The well has had a steady show of oil since the formation was topped at 1418 feet. It is thought to indicate a new pool.

Riverland Oil Company and Lease Investment Company's Bond-Knight 1, NE NW SE 10-13n-10e, eastern Okfuskee County, which made between 90 and 100 barrels of oil in the Dutcher sand some two weeks ago and went to water, was drilling ahead below 2805 feet in the Wapanucka lime. The well went into the Dutcher formation at 2210 feet, and, after drilling to the base at 2355 feet, found water in the hole.

Stanolind Oil & Gas Company and Amerada Petroleum Corporation's Billington 1, SW SE SW 32-9n-3e, the well which opened a new producing area for Pottawatomie County a few weeks ago, was shut in after producing 349 barrels of oil in six hours. The well was a failure in the second Wilcox sand between 5316 and 5320 feet and was plugged back to 5238 feet in the Simpson dolomite, where it made the production. Gas was estimated at 2,000,000 cubic feet. It was acidized with 3000 gallons.

Two Small Fitts Extensions

Fitts field continues to feel its way ahead, with two small extensions reported for the northeast area last week. Shell Petroleum Corporation's McKinley 1, SWc NE 23-2n-7e, ran 7-inch casing to 3806 feet after finding saturated Hunton lime from 3836 to 3915 feet. Top of the formation was 3806 feet and it extended 3831 feet. The second extension was J. Paul Getty and Minnehoma Oil & Gas Company's Masters 6, NE NW SE 23-2n-7e, which flowed 397 barrels of oil in two hours after perforating casing between 3755 and 3765 feet in Hunton lime. The first hour it flowed through casing; the second through tubing. The well, north of a 3359-barrel well drilled by Skelly Oil Company, was waiting on potential.

C. W. Roodhouse et al's Booth 1, SE NW SE 20-2n-6e, 3½ miles west of Fitts, was beginning to shape up as a producer. Casing was perforated with 70 shots between 3088 and 3094 feet on a level with the Cromwell sand, and in 10 hours the well had filled 800 feet with oil, making a total fill-up of 1500 feet. The hole already contained 700 feet of oil which came in from the Hunton lime. With 3000 feet of fluid in the hole, operators were rigging up to swab through tubing.

Mid-Continent Petroleum Corporation's Logan 2, SE NE SE 31-11n-5e, East Shawnee pool, Pottawatomie County, topped Wilcox sand at 4845 feet and had an increase in the water at 4857 feet. Drilled to 4868 feet, the well had 2700 feet of water in the hole, but no increase in the oil. It had a very small show of oil higher in the hole. They may plug back and perforate pipe in the Hunton lime, but are more concerned at present with plugging off the water.

Extensions recorded for Lucien and Billings

Oklahoma City.—Big news from the Oklahoma City sector of the state last week was the extension of the Logan County portion of Lucien and the west extension of Billings of Noble County.

The southwest extension well of Lucien was Mid-Continent Petroleum Corporation's Bulling 1, NEc 5-19n-2w. On preliminary tests the well made 1512 barrels of oil in 11 hours. A later 24-hour gauge placed production at 3280 barrels of oil, but no gauge was made of the gas. It was shut in to take potential. Bulling 1 went into the second Wilcox sand at 4897 feet, and drilled to 5040 feet. Location has been made for Bulling 2, SE NE NE 5-19n-2w.

The westward extension for Billings was being made by Tide Water Associated Oil Company's Shaffer 4, NE NW SW 21-23n-2w. The well began showing for oil and began to drill in under pressure at 4345 feet.

Cores Salty, White Sand

In the Noble County portion of Lucien, Stanolind Oil & Gas Company and Amerada Petroleum Corporation's Johnson 1, NWc NE 4-20n-2w, was shut down for orders. It had the top of the second Wilcox sand at 5407 feet and after coring from 5410 to 5418 feet, recovered three feet of salty white sand.

Potential was scheduled for July 15 on the latest producer in Moore pool, Cleveland County, Sinclair Prairie Oil Company's Franklin 3, NE NW SE 21-10n-2w. The well had drilled to 7265 feet in the Wilcox sand, top of which was found at 7216 feet. During the first hour the well flowed 230 barrels of oil and 95,000,000 cubic feet of gas and had 150 pounds back pressure. The second hour it made 167 barrels of oil and 83,000,000 cubic feet of gas with 125 pounds back pressure and the third hour, it made 299 barrels of oil and 81,000,000 cubic feet of gas.

The company's Franklin 4, NEc SE

21-10n-2w, had the Simpson at around 6921 feet, set 7-inch casing at 7170 feet, and at 7180 feet was waiting on cement to set. Plugs were to have been drilled July 18.

Stephens discovery starts drilling campaign

Ardmore.—Helmerich & Payne Drilling Company's Graham 1, C SW SW NE 12-1n-5w, discovery well in the Dees sand near the old Doyle pool of Stephens County, has launched a new drilling campaign for Southern Oklahoma which may take on major proportions before the end of the summer. Five new locations were staked there last week as the new well received a discovery rating and began producing its 15,000 barrels discovery right, pinched to 300 barrels of oil daily. Following production of 15,000 barrels, it will be prorated to 100 barrels daily.

First of the new tests reported was the Texas Company's Graham 1, SEc SW NE 12-1n-5w, just northeast of the discovery well. Helmerich & Payne's W. Wade "B" 1, NWc SE 12-1n-5w, south of the initial producer and their W. Wade "A" 1, NE SE NW 12-1n-5w, northwest diagonal offset, are both on farm-outs from Amerada Petroleum Corporation. Helmerich & Payne and Hildebrandt were to move in July 19 for a test at NEc SW 12-1n-5w, west of the new producer. Sunray Oil Company's R. Hefner 1, SEc NW 12-1n-5w, was a new location southwest of Graham 1.

Considerable interest is being shown in Carter Oil Company et al's Harley Community 1, C NE NE 24-2s-4w, in the Milroy area of Stephens County, which was showing for sour gas and an odor of sulphur from between 7283 and 7293 feet in the Simpson. Drilling was going ahead below 7297 feet in crystallized lime.

Eunice gasoline plant to be constructed

Tulsa.—The Skelly Oil Company has announced perfection of plans for erection of a new oil absorption gasoline plant in Section 27-22s-37e, near the Eunice field of Lea County, New Mexico. Construction is due to begin shortly according to J. W. Vaiden, manager of the natural gasoline department of the company.

Equipment in the plant, which will make around 15,000 gallons of gasoline daily, will consist of a Petroleum Engineering Company distillation absorption unit; Drake type oil cooler and vapor condenser and will be operated by nine 230-horsepower Bessemer, type 10 compressors and an Ingersoll-Rand auxiliary generator with 275 horsepower.

The plant will be the twenty-first put into operation by Skelly and will process about 20,000,000 cubic feet of gas daily. Enlargement of the plant may boost production to 25,000 or 30,000 gallons of gasoline daily.

The new unit will serve 47 producing wells in the Eunice area belonging to Skelly and will also handle production from wells belonging to other owners there.

OKLAHOMA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ALFALFA COUNTY—		
Tex-o-Kan, Acre 1, cse ne 14-24n-11w	*	7325
CARTER COUNTY—		
Cox & Hammon, Jackson 3, se se se nw 15-4s-2w	25	2551
Snowden & McSweeney, Apple-Franklin 28, se sw ne 9-4s-3w	37	1087
CLEVELAND COUNTY—		
Sinclair Prairie et al, Marvel 3, nw ne ne 21-10n-2w	55	7266
CREEK COUNTY—		
Reliance, Berryhill 16, nw nw se 9-17n-12e	100	1621
Spartin, Land 2, ne ne sw 12-18n-11e	*	1734
Sinclair Prairie, Oates 3, sw se ne 14-19n-9e	25	1304
Link Oil Co., G. Jones 11, ne se ne 32-18n-7e	30	3620
GARFIELD COUNTY—		
Ohio Oil, State 1, sw sw sw 13-23n-3w (pb 4370)	*	5214
GRADY COUNTY—		
T. H. McCasland, White Eagle 2, ne nw sw 27-3n-5w	*	2760
HUGHES COUNTY—		
J. F. Smith et al, Scroggins "B" 1-A, sw sw ne 20-7n-8e	240	2934
JEFFERSON COUNTY—		
Bridwell Oil Co., Wohlegemuth 15, sw nw nw 30-6s-5w (pb 1504)	5	1535
Wohlgemuth, ne se nw 30-6s-5w	80	1542
Circle Oil Co., Seay 44, nw sw se 3-7s-5w	150	1273
KAY COUNTY—		
Clipper Oil, C. L. Moore 1-A, sw sw sw 3-27n-1w	28	2383
Shell and Continental, Biddle 6, ne ne sw 5-28n-1w	155	2780
LINCOLN COUNTY—		
Mid-Continent, J. Wagner "B" 1, nw se nw 10-13n-6e	¶6	4140
Amerada et al, Stewart 1, ne se ne 15-13n-6e	308	4280
Stanolind et al, Cleveland 1, ne ne nw 35-15n-2e	148	5160
Stanolind-Amerada, Crawford 2, nw nw se 35-15n-2e	1257	5145
Ross Oil Co., Bailey 1, se se se 22-15n-6e	¶2	2253
Amerada & Stanolind, Sporn 1, ne ne se 20-17n-3e	129	4597
LOGAN COUNTY—		
Sinclair Prairie, Shaffer 4, se ne sw 28-17n-4w	690	6470
NOBLE COUNTY—		
Stanolind & Amerada, Klob 5, sw sw nw 33-20n-2w	109	5117
OKFUSKEE COUNTY—		
Delaney, Lewis 1, se se se 7-10n-9e	29	1925
Sinclair Prairie, Fisher 13, ne nw sw 19-10n-9e	120	1896
Hayes & Scruggs, Thomas 1, sw sw se 21-10n-11e	¶12	2633
Moore, Stephenson 1, nw ne se 29-10n-11e	*	3170
OKLAHOMA COUNTY—		
Texas, State Land 3, ne ne ne 36-14n-4w	1790	6571
Anderson & Kerr, Community 1, ne nw sw se 27-12n-3w	3250	6560
Community 2, cel½ sw se 27-12n 3w	5218	6543
Inland Dev. Co., Horn 3, cse se nw 27-12n-3w	689	6533
Ohio Oil Co., McMillian 4, se nw sw 31-14n-3w	2412	6700
OSAGE COUNTY—		
Mason & Carter, 9, se sw ne 23-21n-8e	4	1215
Lewis Prod. Co., 9, sw sw se 28-24n-7e	77	2622
Peters & Norbla, 1, sw se nw 28-24n-8e	*	2701
PAYNE COUNTY—		
Deep Rock et al, Harris 1, se sw ne 9-18n-5e	143	3598
PONTOTOC COUNTY—		
Continental, King "A" 1, nw se ne 26-1n-8e (pb 865)	5	1752
Phillips, Norris 18, se sw sw 25-2n-6e	2736	3678
Burk Greis, Chambers 8, s½ ne ne nw 36-2n-6e	3352	3784
Skelly, Akers 3, se sw ne 36-2n-6e	4587	3949
Fleetborn, Lewis 2A, sw se sw 19-2n-7e	1861	3975
Magnolia, F. C. Norris 2, sw se ne 21-2n-7e	541	3765
Bishop, Simpson 1B, nw sw nw 28-2n-7e	100	2580
Moore, Schauers 1, nw sw nw 29-2n-7e	72	1832
Smith 8-B, se ne nw 31-2n-7e	801	4375
American O&R, McClure 1, nw nw sw 9-4n-6e	*	2733
Sinclair Prairie, Farney 2, cse nw sw 28-5n-8e	26	949
POTTAWATOMIE COUNTY—		
Denver P&R, Risenhoover 1, se ne ne 14-7n-4e	127	4171
Magnolia, Jones "B" 3, se nw ne 18-7n-4e	108	4010
Arrow, Cassey 1B, sw ne ne 23-11n-6e (pb 4400)	96	4548
SEMINOLE COUNTY—		
Lynch, Cravins 3, ne sw sw 24-5n-5e	15	2675
Grisso et al, Orwig 1, se se se 15-6n-6e	225	2315
Pine, Williams 1A, se ne ne 22-6n-6e	*	1851
W. B. Pine, Williams 1B, se ne ne 22-6n-6e	*	600
Shell, Caesar 1, nw se ne 11-7n-6e (pb 3358)	115	4470
Skelly, Varnum 2, ne nw nw 5-9n-6e (pb 4202)	287	4158
Amerada, McLaron 3, nw nw ne 36-10n-7e	699	3635
W. W. Jones, Yarnah 1, nw sw ne 36-10n-7e	1352	3600
Sun, Tiger 1, nw nw sw 36-10n-7e	180	3697
STEPHENS COUNTY—		
George L. Pace, Allen 11, ne se ne 3-2s-8w	40	2166
McGraw Oil Co., Elmore 13, sw sw nw 24-2s-4w	7	620
TULSA COUNTY—		
B. Roberts et al, Roberts 1, cne ne se 27-19n-10e	*	2040
W. T. Erting, Baker 1, se nw nw 10-18n-12e	*	1723
Mid-Continent, Martin 1, sw nw sw 10-19n-12e (otd 524)	¶7	1301

*Failures; †Junked; ¶Million cu. ft. gas.

Three new wildcats started in Oklahoma; two resume

Tulsa.—Despite the fact that few wildcats were reported for Oklahoma last week, three new tests were started; two received renewal tickets and one was a gasser.

Of the starts, one was located in rank wildcat territory, southwest of Erick in Beckham County. It was Bud Lewis et al's Douglas 1-A, C SE NE 21-8n-26w. Next was a location just southeast of the Cement pool and about four miles west of the old Chickasha gas pool of Grady County. It was Doyle Petroleum Company's Huffine 1, C NW NW SE 30-5n-8w. Apparently the test has an equal chance of getting either gas or oil. Pontotoc County had another beginner at Stanolind Oil & Gas Company and Amerada Petroleum Corporation et al's Salina 1, SE NE NW 4-5n-6e. It is northwest of the old Conservation pool, barely inside the county.

The gasser was Ross Oil Company's Bailey 1, SEc 22-15n-6e, northwest of Stroud in Lincoln County. It was completed for 2,000,000 cubic feet of gas through casing and had about 800 pounds pressure. The test was started May 24 of this year and was completed just below 2190 feet.

Of the renewals, one was Norbla Oil Company's Osage 1, SEc 36-23n-6e, on the north bank of the Arkansas River and west of Gilliland pool in Osage County. It was drilling at 950 feet. The other was Black Gold Oil Company's Cooley 2, SWc 25-28n-4e, drilling at 1165 feet. It is northwest of the Kay County extension of Burbank pool of Osage County.

KANSAS FIELDS

Looking forward to very active summer season.

* * *

Murphy has possible new gas pool in Rush County.

* * *

Salt water disposal well strikes commercial oil.

Wichita.—Operators in Kansas are beginning to look forward to one of the most active summer seasons, with new areas continuing to appear on drilling reports. Another gas pool was in prospect for Rush County, and to the southeast, in Rice County, a salt water disposal well did an about-face and made oil. Two areas in Barton County received considerable attention, one appearing as a new pool and the other showing as an opener or extension.

Blows Tools Up in Hole

S. A. Murphy et al's Roth 1, NWc SW 21-16s-18w, 9 miles north of La Crosse in Rush County, encountered from 1,000,000 to 5,000,000 cubic feet of gas in cherty conglomerate at 3580 feet and may open a new gas pool. Top of the formation was found at 3537 feet. The well had drilled through the Lansing lime with no show of either oil or gas. Force of the gas from the lower horizon blew the tools up in the hole, kinking the line. The new producer is 6 miles south of production in the Madden pool of Ellis County and about 24 miles northwest of the Otis oil and gas field.

Surprise well of the week was Gulf Oil Corporation's Lyon 1, NWc NE 18-20s-9w, at the south end of the Chase pool in Rice County. Started as a salt water disposal well, it found commercial production unexpectedly at 3294 feet and again at 3308 feet in the Siliceous lime. The hole filled 425 feet with oil, and tankage was erected for a production test.

Trapp Outpost Produces

Empire Oil & Refining Company's Henry Bitter III No. 1, in Section 5-16s-13w, Barton County, ½ mile south of production in the Trapp pool of Russell County, pumped 1041 barrels of oil in 12 hours from Siliceous lime at 3308 feet following acidization. The well received an official potential of 2082 barrels of oil. Its completion has caused increased interest and activity in the area.

South of Great Bend, Barton County, Hanna et al's Luce 1, SWc 21-20s-13w, a wildcat, began showing as a possible producer from 3293 to 3295 feet after topping the Kansas City lime at 3239 feet. The lime remained hard until a soft spot was encountered at 3293 feet. Casing was cemented at 3286 feet, and the well will be drilled in soon. It is about 4 miles northeast of Hiss pool.

Stanolind Oil & Gas Company's Zugg 1, SWc 26-16s-13w, an east offset to the discovery producer in the Studer pool of Barton County, topped the Siliceous lime at 3401 feet and cored to 3408 feet for a show of oil. It is reported running five feet higher on the top of the lime than the discovery well.

Otis Field Extended

A new gasser was being completed in the Barton County sector of the Otis gas and oil field last week at Flynn, Morgan & Cobb's Robenseifer 1, C NW 7-18s-15w. Making about 30,000,000 cubic feet of gas from the Reagan sand, the well extends production ½ mile northeast.

Stanolind Oil & Gas Company's Panning 1, NEc NW 11-20s-11w, west offset to the discovery producer in the Kowalsky pool, pumped 809 barrels of oil in 8 hours. Production was from Siliceous lime at 3274 feet. The well may be better than the other two producers in the pool.

C. R. Craft et al's Barnholt 1, SWc SE 30-20s-5w, McPherson County's newest producer, south of Windom, is thought to be good for about 700 barrels of oil daily on the basis of a pumping and natural flow test. It made 25 to 30 barrels of oil per hour during an 18-hour test following acidization.

Two more producers were recorded for the Bemis pool of Ellis County last week, both of them in Section 27-11s-17w, a solid holding of Deep Rock Oil Corporation. Baumer 7, SWc NW 27-11s-17w, made 637 barrels of oil during a 6-hour test, to establish a 24-hour flow of 2648 barrels of oil. Baumer 9, SE NW NW 27-11s-17w, made 754 barrels of oil in 6 hours, or 3016 barrels in 24 hours.

Carter Oil Company's Staab 4, SW SE NW 11-12s-18w, Walters pool, had the Siliceous lime from 3651 to 3656 feet and made 1074 barrels of oil in 22½ hours.

Carter to Drill Deeper

Carter Oil Company et al's Bontrager 1, NEc 26-24s-5w, 1 mile west of production in the Yoder pool of Reno County, rigged up rotary tools to drill deeper from 3441 feet in the Mississippi chat where it had a small show of oil and 2,000,000 to 3,000,000 cubic feet of gas and a hole full of water. Top of the chat was found at 3355 feet and it was drilling ahead below 3478 feet in lime.

Leavell Coal Company et al's Baxa 1, NWc 12-9s-17w, in the Westhusin area of Rooks County, pumped 857 barrels of oil in 18 hours and 30 minutes from the Oswald lime at 3255 feet following acidization. It is just southwest of Basin Oil Company's Baxa 1, NEc 23-9s-17w, abandoned last week at 3630 feet.

Hartman & Blair's Boxberger 2, SE NE NW 33-13s-14w, in the Russell pool, was completed for 400 barrels of oil from granite wash at 3355 feet. It is probably the deepest producing well in Russell County.

Skelly Oil Company's Rein 1, SW NW SW 8-15s-13w, south of Berrick, pumped 593 barrels of oil in 12 hours. Following acidization with 1000 gallons, the well pumped 1221 barrels in 12 hours and established a 24-hour potential of 2442 barrels of oil.

Philhan Oil Company's Michel 1, NW NE SW 36-14s-14w, west of the Hall pool in Russell County, pumped and flowed 1073 barrels of oil in 23 hours from 2922 feet in the Oswald lime.

In the Breford area of Barton County, Carter Oil Company's Krautwurst 1, NE SE NW 10-17s-11w, had a hole full of oil at 3320 feet. On a preliminary test the well made 192 barrels of oil in 5 hours and was then deepened to 3321 feet in the Siliceous lime.

Lew Prunty et al's Smith 1, NWc SE 16-25s-1e, north of Wichita in Sedgwick County, was completed for 580 barrels of oil from the Dolomite at 3344 feet. It was acidized with 2000 gallons.

15 new wildcats started in Kansas despite hot weather

Wichita.—Hot weather apparently offers an incentive for more intensive activity among wildcat operators in Kansas as 15 new tests were either drilling or getting ready to do so as the week drew to a close.

Barton County started the play with two. Northwest of the Susank pool, Phillips Petroleum Company was completing cellar for McClanahan 1, NEc SE 7-16s-13w. Southeast of the same pool, Ralph Wixon et al's Buhrle 1, SEc NE 14-16s-13w, also had cellar dug.

Pryor & Lockhart made location for Brown 1, NE SE SE 34-33s-3e, southeast of Rainbow Bend pool of Cowley County. In Ellis County, Vickers Petroleum Company was building rig for Lucas 1, NWc NE 16-17s-14w, north of Hoisington. West of South Lorraine pool and southeast of Heiken pool in Ellsworth County, C. E. W. Skiles et al's Sturm 1-A, SEc SW 31-17s-9w, was spudding.

Davis & Sory were well started on Davis & Sory 1, SWc SE 32-21s-11e, southeast of the Bradfield pool of Lyon County. It was drilling at 1270 feet. Over in Marion County, Hutchinson Oil & Gas Company et al's Erhman 1, SEc SW 15-18s-1e, was moving in materials. It is west of Durham. McPherson County's new test is Clyde Pulse

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INDEPENDENT EXPLORATION

POINTING THE WAY IXC FOR THE DRILL

COMPANY

ESPERSON BLDG. HOUSTON, TEXAS

et al's Boesker 1, SEc NW 29-20s-1w, equidistant between Ritz-Canton and Graber pools. It was also moving in materials.

North of the Hall pool in Russell County, rigging was started at Parks' Opdyche 1, SWc 20-14s-13w. Stafford County had two new starts. The first in operation, Stanolind Oil & Gas Company's Francis 1, NEc NW 26-22s-13w, west of Hudson, was fishing at 250 feet. The other was Newman & Winemiller's Sittner 1, NEc 33-21s-12w, several miles southeast of Gates pool, which was a rig. Sedgwick County accounted for one at W. G. Talbott et al's Downs Estate 1, SEc NW 32-28s-2e, which was a location northeast of Derby.

KANSAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BARTON COUNTY—		
Spencer & Yarnell, Patzner 6, se sw se 36-17s-11w	714	3247
Stanolind, W. M. Panning 1, sw sw se 2-20s-11w	1633	3281
Continental, Ainsworth "A" 3, sw se ne 33-16s-13w	1176	3397
Texas, L. Hoffman 1, nw nw nw 6-16s-13w	1610	3288
BUTLER COUNTY—		
Empire, Lathrop 26, ne se sw 17-23s-4e	90	2082
CHAUTAUQUA COUNTY—		
Ben Gralapp, Miller 1, sw se sw 23-32s-12e	*	1915
COWLEY COUNTY—		
Palmer et al, O'Grosky 1, se se nw 31-32s-5e	*	3161
ELLIS COUNTY—		
Texas, F. A. Bemis 4-A, ne se ne 28-11s-17w	2954	3567
Sinclair Prairie, Romine 2, se sw sw 7-11s-16w	760	3315
Phillips, Staab 2, cw½ w½ ne 11-12s-18w	786	3641
ELK COUNTY—		
Republic Nat. Gas, Glasscock 1, se ne sw 19-31s-11e	*	2269
ELLSWORTH COUNTY—		
Phillips, Patzner 3, nw sw sw 30-17s-10w	*	3325
HARVEY COUNTY—		
Hippel et al, Norris 2, ne nw sw 30-23s-3w	967	3373
McPHERSON COUNTY—		
Darby, Coons 2, sw se sw 20-19s-1w	*	3814
Joe Rush, N. Robinson K-1, nw sw sw 10-19s-2w	*	3005
Continental, Hetzke 7, cw½ e½ ne 29-21s-1w	756	3320
RENO COUNTY—		
Carter, Hogan 6, cse 19-24s-4w	257	3331
Haynes Drlg. Co., Muller 5, se ne nw 30-24s-4w	424	3398
Magnolia, Clyde Harris, sw nw sw 9-26s-4w	560	4032
RICE COUNTY—		
Sinclair Prairie, Powell 1, ne ne sw 31-18s-7w (pb 3236)	171	3239
Barnsdall, Hathaway 3, se nw ne 33-19s-10w	1542	3289
Gulf, L. Knop, ne ne nw 33-19s-10w	1004	3292
Empire, Heckel 10, se ne sw 18-20s-9w	666	3345
Sinclair Prairie, Knop 2, nw nw nw 4-20s-10w	592	3318
Gulf, Poncin 3, se nw ne 5-20s-10w	1595	3330
Tatlock, Poncin 5, nw ne ne 5-20s-10w	1082	3304
Poncin 7, ne ne ne 5-20s-10w	436	3320
J. H. Tatlock, A. Bayer "B", sw ne nw 7-20s-10w	1428	3295
T. M. Deal, Gossman 1, sw sw sw 4-21s-7w	2230	3362
Atlantic, Gossman "A" 3, sw ne se 8-21s-7w	485	3364
Grace Oil Co., Gossman 4, ne ne ne 8-21s-7w	6111	3370
Sage & Yankey, Gossman 6, se sw nw 9-21s-7w	6137	3359
Reserve Dev. Co., H. R. Patton 7, ne ne nw 16-21s7w	4108	3388
Aylward Prod. Co., Johnson 6, ne ne ne 17-21s-7w	*	3384
ROOKS COUNTY—		
Phillips, Maimquist 1, sw sw sw 9-9s-17w	*	3515
RUSH COUNTY—		
Carter, Prosch 1, cn½ n½ se 21-18s-16w	¶10	3615
Morgan & Flynn, Koral "A", cs½ s½ nw 23-18s-16w	861	3555
RUSSELL COUNTY—		
Smoky Hill, Miller 12, nw sw nw 31-14s-13w (pb 2939)	1071	2953
Billings et al, Boxberger 1, ne ne se 21-14s-14w	464	3055
A. H. Witt, Witt 4A, ne ne se 3-14s-15w	2367	3094
Transwestern, Wm. Polcyn 7, ne sw sw 11-14s-15w	1618	3268
Hartman & Blair, Harbaugh 5, nw ne sw 25-14s-15w	1312	3158
Carter, Josephine 1, se se se 7-15s-13w	832	5980
Josephine 2, ne se se 7-15s-13w	2342	3216
Coralena, L. A. Sellens 3, ne ne nw 17-15s-13w	1352	3206
Empire, Sellens 6, nw sw sw 30-15s-13w	1166	3296
Sellens 7, sw nw sw 30-15s-13w	1992	3285
W. I. Southern, Boomhaur "A", nw se ne 30-15s-13w	2224	3245
Derby & Reserve, Michaelis 5, sw sw nw 31-15s-13w	2476	3274
Gulf, Hoffman 5, ne nw sw 31-15s-13w	1244	3280
Sinclair Prairie, H. J. Sellens 2, se se nw 36-15s-13w	408	3360
Empire, Boomhaur 2, se se ne 25-15s-14w	2328	3307
SEDGWICK COUNTY—		
Prunty Prod. Co., Smith "A" 1, nw nw se 16-25s-1e	580	3344
STAFFORD COUNTY—		
Stanolind-Amerada, Fitzgerald 5, sw se se 22-24s-13w	1171	4126
SUMNER COUNTY—		
Texas, E. Carr 6, ne se ne 5-32s-1w	488	3693

*Failures; †Junked; ¶Million cu. ft. gas.

Mapping the Way for Oil
In West Texas and New Mexico

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Photographic Maps **Completed or in Process on the Following Counties:**

BRISCOE	LUBBOCK
COTTLE	LYNN
CROSBY	MARTIN
DAWSON	McCULLOCH
DICKENS	MITCHELL
FISHER	NOLAN
FLOYD	RUNNELS
FOARD	SCURRY
GAINES	STONEWALL
HALE	TAYLOR
HALL	TERRY
HASKELL	THROCKMORTON
HOWARD	WARD
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KNOX	WILLBARGER
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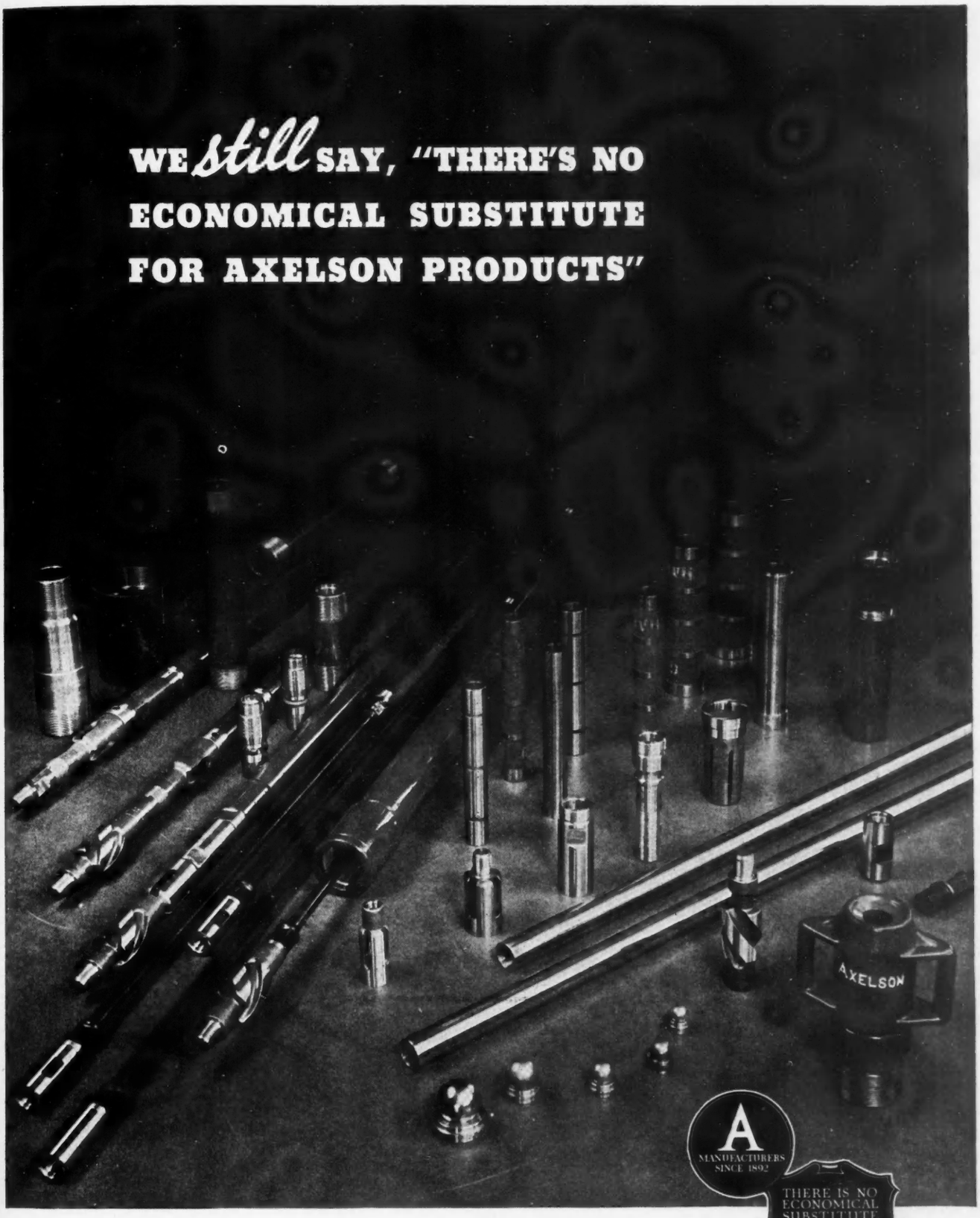
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DEEP WELL PLUNGER PUMPS **AXELSON** **SUCKER RODS**

NEW MEXICO

Northeast Monument outpost finds only gas.

* * *

Small well location northeast of Lynn field.

Hobbs, N. M.—Gulf Oil Corporation's E. Shipp 1, C SE NW 21-19s-37e, northeast outpost for the Monument field, failed to yield oil or water with a natural flow of 4,000,000 feet of gas from lime at 3975 feet. It was drilled to 335 feet sub-sea, or in close proximity of the water level. Gas is credited with coming from the upper section of the lime, as 5½-inch pipe was cemented at 3621 feet in anticipation of a marginal oil producer. This outpost is two locations north of one of the failures that have been drilled within or near the field. The same company's State-Graham 2-G, C NW SE 17-19s-37e, near the north line of production, is attempting to complete at 3890 feet, or 224 feet sub-sea, and flowed by heads after using 2000 gallons of acid. It will be reacidized.

Lea County drilling activity is displaying signs of expansion, as 16 locations were reported the past week and 13 the previous week. Six fields and a wildcat block shared in the current list of locations. The Eunice lime area accounted for 5 operations. Closing of the short gap between the Monument and Eunice fields is slow in materializing, but an intermediate test on the east edge developed last week when Continental Oil Company started work on State 1-A-20, NE NE SE 20-20s-37e. The Texas Company's State 5-C, C NE NE 19-20s-37e, is a new operation for the south line of Monument field.

Magnolia Petroleum Company's Hana 1, C SE NE 7-26s-38e, wildcat in the southeast portion of the county, was ordered abandoned in gray lime at 4030 feet. No oil or gas shows were recorded.

Lynn Outpost Small Well

Continental Oil Company et al's Farney 2-A-5, C NE SE 5-23s-36e, one location northeast of production in the Lynn pool, tested 5 barrels per hour on gas lift through casing and with drill pipe in the hole. Saturated lime was logged at 3690-3759 feet, and the hole was drilled to 3796 feet, or 308 feet sub-sea.

New operations allotted the Eunice field were near the edge of the producing area. Continental Oil Company's State 1-A-17, C SE SE 17-22s-36e, and Gulf Oil Corporation's Day 2, C SE NW 6-22s-36e, are in the south portion. Jim Murray et al's State-Wallace 4, NW SW NW 3-21s-36e, is a substitute location for an earlier site assigned this well number. Atlantic Refining Company's State 1-P, C SE NW 25-20s-36e, and Stanolind Oil & Gas Company's Gilluly 6-A, C NW NE 25-20s-36e, are on the northwest edge.

Magnolia Petroleum Company's Cary 3, C NW SE 21-22s-37e, an inside location for the Penrose field, responded to nitro shot at 3494-3595 feet with an initial flow of 80 barrels oil in 7 hours and 8,000,000 feet of gas daily. Gulf Oil Corporation is starting two tests in this area, being Baker 2, C NE SE 5-22s-37e, and Rienwalt 1, C SW NW 4-22s-37e, Skelly Oil Company has installed machine for the drilling of Grizzell 1, C SW NE 6-22s-37e. The latter has also rigged up to drill E. C. Hill 1, C Lot 7, 6-21s-37e, about 1 mile northeast of two small producers along a north trend from the Hardy field. Continental Oil Company et al's A. M. Lockhart 1-A-17, C NW SW 17-21s-37e, west offset to a small producer, used 1500 gallons of acid in lime and sand zone at 3733-96 feet, and flowed 13½ barrels oil in 10 hours.

Stanolind Oil & Gas Company is enlarging its operations in the sandy-lime belt, having lately made location for Langlie 2-B, C NW NW 15-25s-37e, and Langlie 3-B, C SW SW 14-25s-37e, both in the Langlie area. Location was made for Myer 1-B, C NW NW 7-24s-37e, located west of the Mattix field. Plains Production Company et al's Mosley-Repollo 2, C NE SE 34-24s-37e, offsets production in the Mattix field. Production from the Delaware zone is the objective of a western Lea County wildcat being started by Jas. Mascho et al's Gloyd-Conoco 1, C SE SE 20-22s-33e.

NEW MEXICO
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
LEA COUNTY (Eunice)—		
Empire, State 2-G, c se sw 2-21s-36e	600	3842
Gulf, State-Bell-Ramsey 2-B, c sw sw 33-20s-37e	900	3840
W. W. White 6, c nw se 25-20s-36e	500	3850
Stanolind, O. J. Gilluly 3-A, c sw ne 25-20s-36e	1500	3850
LEA COUNTY (Langlie)—		
Sun, I. R. Stuart 3, c ne ne 15-25s-37e	475	3330
LEA COUNTY (Mattix)—		
Stanolind, C. Myers 5, c se nw 22-24s-37e	10	3560
LEA COUNTY (Monument)—		
Ohio Oil, Laughlin 4, c w½ se ne 9-20s-37e	120	3905
Phillips, Hobbs-Britt (Conoco) 3, c sw sw 18-20s-37e	720	3870
Shell, State 3-E, c se nw 13-20s-36e	2500	3882
LEA COUNTY (Penrose)—		
Amon G. Carter et al, Elliott 2, c ne nw 22-22s-37e	42	3622
LEA COUNTY (Wildcat)—		
Magnolia, Hanna 1, c se ne 7-26s-38e	*	4030

*Failures; †Junked; ¶Million cu. ft. gas.

New high production in May, Bureau reports

Washington.—A new high record in crude petroleum production was registered in May, when total output reached 110,911,000 barrels, compared with 104,979,000 barrels in April and 93,739,000 barrels in May, 1936, it was disclosed by the Bureau of Mines July 15 in its monthly report.

The daily average production of 3,577,800 barrels was 78,500 barrels higher than the previous record of 3,499,300 barrels in April and approximately 554,000 barrels above the May, 1936, average of 3,024,000 barrels, it was stated.

Most States Increase

Daily average production increased in all the major fields except Oklahoma, which declined from 680,600 barrels in April to 665,100 barrels in May, the bureau reported. The increase in Texas was 48,700 barrels, in California 29,800 barrels, in Louisiana, 5700 barrels, in Kansas, 5200 barrels and in New Mexico 6800 barrels. There were slight increases in Montana and Wyoming, while production in Pennsylvania and Michigan decreased slightly.

Oil well completions during the month numbered 2192, representing the expected seasonal increase over the 1937 completions in April but a large gain over the 1592 completions in May of last year. Although the initial of the month's completions was 925,000 barrels compared with 739,700 barrels for the wells brought in May, 1936, the average per well was but 420 barrels compared with 460 barrels for last year's completions.

The yield of gasoline, straight-run and cracked, decline seven-tenths of one percent in May to 43.9 percent, which was two-tenths of one percent lower than a year ago.

"The indicated domestic demand for motor fuel during May was 45,484,000 barrels, or eight percent higher than for May, 1936, compared with a gain of 11 percent for the January-May period in 1937 over the same period in 1936," the bureau commented. "Motor fuel exports amounted to 3,333,000 barrels, or 625,000 barrels more than the average for the first four months of the year. Stocks of finished and unfinished gasoline declined 1,000,000 barrels during May to 79,677,000 barrels, compared with a decline of 1,904,000 barrels in May, 1936.

"Stocks of both distillate and residual fuel oils gained during May, while demand for both products declined. Demand for both products for the first five months of the year is above the demand for the same period in 1936, while the stocks on May 31, 1937, were lower than they were for the same date a year ago."

Details of supply and demand in May were as follows:

New supply: Domestic production, crude, 110,911,000; daily average, 3,578,000; natural gasoline 3,988,000; Benzol, total, 115,148,000; daily average, 3,714,000. Imports: Crude in bond 254,000;

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for domestic use 2,384,000; refined products in bond 1,093,000; for domestic use 716,000. Total new supply, all oils, 119,595,000; daily average 3,858,000. Increase in stocks, all oils, 8,473,000.

Demand: Total 111,122,000; daily average 3,585,000. Exports, crude 6,796,000; refined products 9,494,000. Domestic demand: motor fuel, 45,484,000; kerosene, 4,150,000; gas, oil and distillate fuels, 6,806,000; residual fuel oils, 25,729,000; lubricants 2,078,000; wax, 79,000; coke, 524,000; asphalt, 2,293,000; road oil, 724,000; still gas, 5,539,000; miscellaneous, 205,000; losses, 1,311,000. Total domestic demand, 94,922,000; daily average, 3,062,000.

Stocks: Crude, 308,209,000; natural gasoline 5,989,000; refined products, 234,483,000; total all oils 548,681,000; days supply, 153.

Texas permits increase substantially during week

Austin.—The Texas Railroad Commission approved last week permits for drilling 359 new wells in Texas, 174 more than were allowed the week before.

In the East Texas field there were only three new locations, one each in Gregg, Upshur, and Rusk counties. The East Central Texas district reported 28 scattered locations.

West Texas reported 77 permits, with 17 in Ector County, 17 in Winkler County, 12 in Ward County, and 10 in Upton County. The Panhandle area reported 38 permits, including 12 in Hutchinson County.

There were 41 new locations allowed in North Texas, 11 being in Jack County and 10 in Young County. West Central Texas reported 20 permits.

Kansas completes 55 and makes locations for 39

Wichita.—Drilling crews finished 55 wells in Kansas last week while stakes were being driven for 39 wells. The completion list included 46 oil wells, total initial output 67,937 barrels, 1 gas well of 10,000,000 cubic feet capacity, and 8 dry holes. The 39 locations were in the following counties: Barton 8; Russell 6; Ellis 5; Rice 4; Harvey 3; Grant and Marion 2 each; Barber, Ellsworth, Lyon, McPherson, Ness, Pratt, Reno, Sedgwick and Stafford 1 each.

More completions than new starts in Oklahoma

Tulsa.—Completions ran well ahead of first reports in Oklahoma last week, 65 to 37. Division of the completions was 49 producing oil wells with 56,308 barrels aggregate initial, 5 gas wells with 65,250,000 cubic feet capacity, and 11 dry holes. Distribution of first reports by counties was: Seminole 5; Carter 4; Okmulgee, Osage and Pontotoc 3 each; Cleveland, Creek, Jefferson, Lincoln, Stephens and Wagoner 2 each; Cotton, Grady, Logan, Muskogee, Noble, Oklahoma and Pottawatomie 1 each.

NORTH AND WEST TEXAS

New fields loom in Andrews and Gaines Counties.

* * *

Continental may have field 9½ miles from Wasson.

* * *

Wildcat in Terry County logs top of Yates sand.

Midland.—Wildcat oil producers were in process of completion in the northwest corners of Andrews and Gaines Counties late last week, with an unusually large number of prospects on separate drilling blocks in the north portion of the Permian basin nearing a decisive stage. Two wildcats were eliminated by developing heads of sulphur water in the big lime zone.

The second oil area for the Texas-New Mexico border appeared probable last week when Amerada Petroleum Corporation's Littman 1, C NW NW PSL Section 6, Block A-29, northwestern Andrews County, swabbed 73 barrels of 31.7 gravity oil in 15 hours after reaciding with 2000 gallons in lime at 4316-4365 feet. It was originally acidized with 1000 gallons, and swabbed 52 barrels in 13 hours. No gas was encountered in the lime section, topped at 3860 feet, with an elevation of 3577 feet. This wildcat is about two miles east of Jim W. Brown & Reynolds' Parcell 1, C NW SE 8-21s-38e, New Mexico, which showed for a small oil producer last March in the same horizon, but slightly lower structurally, and later drilled into water at 4401 feet, or 828 feet sub sea. The latter was plugged back to 4391 feet, and work was temporarily suspended without qualifying as a commercial producer.

Empire Oil & Refining Company's Biles 1, C SW SW PSL Section 12, Block A-31, northern Andrews County, about 10 miles east of Littman 1, logged oil stain and saturation at intervals in lime below 4353 feet. Water found at 4833-5010 feet could not be swabbed dry.

Southwestern Gaines Show

In southwestern Gaines County, W. M. Blevins, Tom Sloan and Shell Petroleum Corporation's Barber 1, NW NE NE PSL Section 19, Block A-28, also recorded evidence of oil in lime followed by water at 4725 feet, with an elevation of 3473 feet. It will be deepened to fulfill contract and abandon.

Completion of the fourth wildcat strike for Gaines County within the past year was underway late last week. Continental Oil Company, co-discoverer of the Wasson area, showed unusual confidence of flowing production from its Dr. E. H. Jones 1, C SE NE PSL Section 22, Block A-7, located in the northwest part of the county and about 9½ miles west by south of its Wasson discovery, by shutting down at 4927 feet, or 1277 feet sub-sea, to permit the well to kickoff.

High structural position recorded by Jones 1 on all important geological markers forecast a new field discovery some weeks ago. A show of gas was found in Yates sand, topped at 3140 feet, and at intervals in big lime, topped at 4020 feet, gas pressure was present. Seven-inch pipe was cemented at 4833 feet, and crude was substituted for mud to drill in with rotary. First oil stain appeared in cores at 4840-63 feet, with soft lime at 4895-4902 feet.

Argo Oil Corporation's E. H. Jones 1, C NE¼ of PSL Section 2, Block A-7, about four miles north by east of the above project, logged top of Yates at 3075 feet, or 594 feet above sea level, and is 84 feet higher on structure, according to a correlation of the two logs. The latter was in anhydrite at 3800 feet.

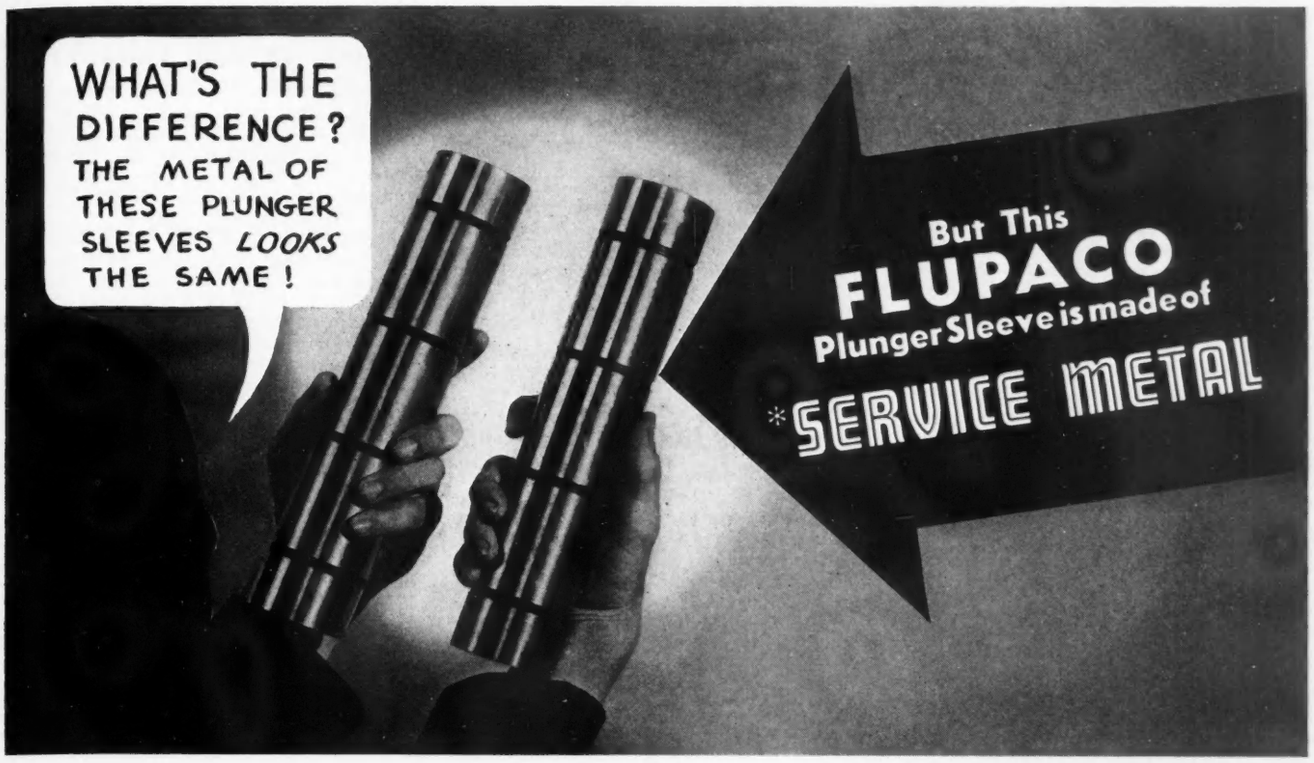
Wasson Extensions Due

Major extensions for the Wasson area, northern Gaines County, are due to occur later this month. Continental Oil Company and Amon G. Carter's Langdon 1, SW Section 44, Block A-X, about three miles northeast of the producer, was drilling below 4800 feet, having topped the big lime at 3980 feet, or 433 feet sub sea, being 152 feet lower on structure. Amerada Petroleum Corporation's Matthews 1, NEc Section 417, about 1¼ miles southwest of Wasson 1, was drilling below 4300 feet, with an elevation of 3557 feet. Phillips Petroleum Company and I. T. I. O. Company's Brand 1, SE SE NE Section 55 about 1⅝ miles northwest of production, logged top of anhydrite at 2140 feet, and was drilling at 2350 feet, with rig up for a west offset to Wasson 1. Three tests are underway on the discovery block.

Bailey County Wildcat Resumes

Along the north rim of the Permian basin, E. L. Wilson et al's Yellow House 1, southeastern Bailey County prospect, has resumed drilling after changing to cable tools at 4497 feet. Saturated lime cased off will be tested by gun-perforating pipe if the lower lime fails to produce.

In northern Hockley County, R. F. Duggan et al's Yellow House 1, Labor 11, League 718, Capitol State Lands, cemented pipe at 4090 feet, and is awaiting cable tools to deepen from 4100 ft. It is checking lower on structure than a wildcat



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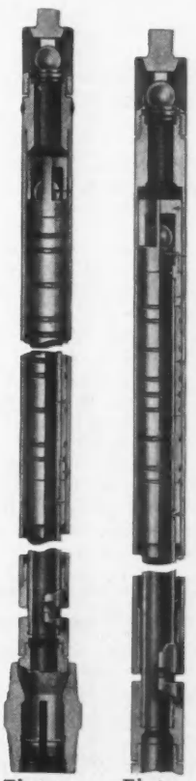

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failure drilled about eight miles northwest in Lamb County.

R. L. Foree et al's Pool 1, Terry County prospect, will change to cable tools at 4847 feet after cementing pipe at 4830 feet. An electrical logging instrument placed the top of Yates sand at 3138 feet and top of solid lime at 4592 feet. It has an elevation of 3447 feet.

Stanolind Oil & Gas Company's Slaughter 1, southern Hockley County test several miles east of The Texas Company et al's producer, was drilling at 4330 feet. Top of anhydrite at 2220 feet with an elevation of 3518 feet, places Slaughter 1 about 20 feet lower on structure.

Two Yoakum Tests Going

Yoakum County is rated high on oil prospects along a northwest trend from the Wasson area, and has two tests underway. The Texas Company's Walker 1, about 8½ miles northwest of the Wasson producer, was drilling below 3300 feet, with an elevation of 3656 feet (derrick). Bohago Oil Corporation & Bond Oil Corporation's West 1 was drilling at 3100 feet. Texas Pacific Coal & Oil Company's Bennett 3, northwest extension for Bennett field, Yoakum County, flowed 30 barrels hourly on preliminary gauge after following nitro shot with acid in lime at 5226-71 feet.

One mile south extension for the east portion of Foster field, Ector County, was attained by York & Harper, Inc., and Sloan-Zook Company's Bagley 1, SWc TP Section 17, Block 42, T-2-S, from saturated zone at 4268-85 feet. It has an elevation of 2929 feet, and filled with oil sufficiently to indicate a producer after a nitro shot. Low structural position of this outpost reveals its close proximity to the edge of production.

Henderson Extended

The interval between the Henderson field, Winkler County, and the largely depleted Hendrick field, to the south, was shortened the past week when R. Olsen Oil Company and Jeffers Oil Company's Hendrick 1, NE NE NE PSL Section 16, Block 26, flowed 888 barrels oil natural in 12 hours through 1¼-inch choke from lime at 3040-46 feet. It is about ¾-mile south of production in the narrow Henderson area.

Ordovician production prospects on the Massie unitized block in Crockett County are nearing a decisive stage. Superior Oil Company (Cal.) et al's Massie 1, C SE NE of GC&SF Ry. Section 55, Block UV, pulled cores at 6826-45 feet carrying good gas and distillate odor, with the formation dipping at an angle of about 20 degrees. A formation tester used at 6924 feet was dry, and the test was logging hard sand and shale at 6950 feet.

Gulf Oil Corporation has temporarily suspended work on two projected Ordovician tests to the north and northwest of the Sand Hills structure, Crane County. This Company's W. N. Waddell et al 3, SWc PSL Section 21, Block B-21, halted at 4803 feet after conditioning the hole, and McKnight 2, which developed a crooked hole at 5404 feet and plugged back to 3395 feet, has also been stripped of its heavy duty rig.

Magnolia Petroleum Company's Edwards 10, offsetting big producers on the east border of Waddell field, Crane County, flowed 77 barrels per hour natural from lime at 3552-55 feet. The well was treated with 5000 gallons of acid, and quit flowing after 10 minutes because of water.

30 geophysical crews are engaged in West Texas

Midland, Texas.—About 30 geophysical crews are currently engaged in West Texas, and three wildcat blocks are being core drilled. Use of geophysical instruments for checking structural conditions in wildcat territory and within or near producing areas has brought into play five different types. The seismograph is in greatest demand. Companies are also using torsion balance, gravimeter, magnetometer and resistivity machines.

Largest Canyon well opens new Jones field

Abilene, Texas.—An intensive search for oil production from the Canyon lime horizon on the eastern front of the Permian basin is to result from the recent spectacular performance of the discovery well of the Avoca area, northeastern Jones County. New record for initial flow from the Canyon was established when Iron Mountain Oil Company and Humble Oil & Refining Company's Carl Olander 1, NEc SW Section 196, BBB&C Ry. Survey, first test for the Avoca area, responded to treatment with 3000 gallons of acid in lime at 3241-50 feet with an estimated yield of 800 barrels of 42 gravity oil in three hours. Casing was damaged when this flow was made July 6, and owners landed a string of 7-inch to 1640 feet, cementing same to 5½-inch oil string at 3239 feet. The well was restored to production July 13 and flowed 1257 barrels oil in 12 hours through ¾-inch tubing choke, with 240 pounds pressure on tubing and 370 pounds on casing. Production carried from 77 barrels to 124 barrels hourly on this official gauge.

Development of the Avoca area will proceed in anticipation of the immediate extension of Humble Pipe Line Company's system from Hawley station, Jones County. Discoverers made location for two offsets, and have cemented surface pipe on H. B. Haterius 1, northeast offset, while Maracaibo Oil Exploration Corporation's C. Olander 1, is an east offset to the discovery. Jones & Stasney assumed a drilling obligation in acquiring lease on 163-acre tract, about ⅝-mile southeast of the producer.

Majors are taking part in the lease trading that has swept across the northeast part of Jones County, although heretofore only several of the large companies have taken part in the development of the county's numerous shallow fields.

Humble Oil & Refining Company's J. N. Teaff 1, C SW NE T&P Ry. Section 33, Block 18, about one mile northeast of nearest production in the Noodle Creek field, oldest oil area in Jones County, is seeking production from the Ordovician series, and was drilling at 4875 feet last week.

Barnett Petroleum Corporation has spudded a projected Canyon lime test for Runnels County, about ½ mile south of Miles, and near the Tom Green County line. Location is on the D. B. Horne 1235-acre tract, NE¼ Section 137, Washington Railway Company Survey. This drilling block was originally assembled last October by E. P. Campbell and F. E. Webb.

New producing areas opened in Jack and Clay Counties

Wichita Falls, Texas.—Jack and Clay counties recorded semi-wildcat oil strikes the past week, while the Rock Crossing section of the South Vernon district, Wilbarger County, has a second well in process of completion from the lower Canyon lime.

Hill & Hill et al's W. O. Hickman 1, near the center of the east line of a 138-acre lease, Thos. M. League Survey, opens new producing territory about one mile east and about the same distance north of nearest production in the Bryson district. The well filled 2800 feet with oil from Strawn sandy-lime series at 2910-22 feet, 3063-73 feet and 3077-81 feet, with the hole bottomed at 3100 feet. Liner was set late last week for a production test. Dry holes separate this outpost from production, thereby giving rise for belief that it may be on another folding. The owner holds lease on about 500 acres in the area.

Sussex Strike Is Shallow

Clay County's new oil strike was credited to Sussex Oil Corporation's C. J. Shumaker 1, about 2½ miles northeast of pumping production in the same sand, is estimated at 50 barrels daily from 10 feet of sand topped at 1129 feet followed by broken pay at 1139-43 feet. Nearby failures indicate that the productive area will be comparatively small. Several majors are to give financial support for a 4250-foot test to be drilled in Clay County and about three miles north of the recent prolific oil producer scored by Walter H. Gant et al on the Worsham ranch from Strawn zone. Fox, Anderson et al have contracted to a Strawn test in NE¼ of H&TC Ry. Section 25, Block 4. Magnolia Petroleum Company purchased a 2500-acre spread for $8,000 cash, and Sinclair Prairie Oil Company paid $6,000 for lease protection.

Another in Rock Crossing

Dudley Golding and Tommy Cochran's Waggoner Estate 1-R, NE SW of H&TC Ry. Section 33, Block 4, about one-third of a mile northeast of regular production in the Rock Crossing area, showed oil saturation in lower Canyon lime core at 3522-31 feet. A string of 7-inch has been cemented at 3514 feet for a production test. This prospective producer is about 1½ miles east by north of McDonald & Campbell's Waggoner Estate 3-A, which is being completed as a pumper in the same lime horizon, which is the deepest oil level in Wilbarger County.

The Texas Company and Sun Oil Company's Les K. Johnson 12, SW NE of S. P. Ry. Section 37, Block L, extended production in the Johnson ranch area, western Foard County, about ¼-mile east with an initial gauge of 393 barrels of oil in 10 hours. Canyon lime at 3550-52 feet was treated with 2000 gallons of acid.

Dewey M. Knox, Graham, Texas, discoverer of the Knox field, west central Young County, sold two leases and eight wells, currently producing 50 barrels daily, to W. J. Rhodes et al for $42,000 cash. This deal involves the Mrs. E. Taylor 50-acre lease and the Burkett 70-acre lease, with four wells on each.

NORTH TEXAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ARCHER COUNTY—		
Deep Oil Dev. Co. et al, L. W. Wilson-McCrory 20, sec 76	563	2245
H. G. Gray et al, J. R. Parkey 1-A, sec 1	*	1801
Iron Mountain Oil Co., J. A. Young 1, sec 2431	*	1470
A. P. Nicholson et al, R. O. Prideaux 1	*	681
Texas Plains Oil Co., W. H. Terrell 4-A, blk 16	*	705
Underwood Drlg. Co., T. B. Wilson 6, sec 12	*	1645
CLAY COUNTY—		
Green Mountain Oil Corp., E. B. Staggs 1, blk 34	†	3297
H. T. Merrill et al, W. L. Sewell 9-B	*	347
O. R. Tautenhahn et al, Ray Fultz 1, blk 61	*	1804
COOKE COUNTY—		
Kingery Bros. & Temple, H. Hensheit 2	*	800
F. J. Hess 1	*	800
F. M. Merrick, Inc., G. A. Stelzer 3-C	*	854
Mudge Oil Co., J. R. Johnson 3	90	1141
Vance Powell et al, D. B. Allred 1	†	4357
DENTON COUNTY—		
McDaniels & Dickson, E. W. Forrester 1	*	1866
FOARD COUNTY—		
The Texas Co., L. K. Johnson 12	943	3552
GRAYSON COUNTY—		
Denver Prod. & Ref. Co., G. E. McMenamy 1	*	4085
JACK COUNTY—		
Beard & Collier, Ezell 4-C	20	3030
Carpenter Oil Corp., C. C. Calvin 1, sec 2	*	550
R. D. Compton Oil Co., C. C. Henderson 2	*	540
C. C. Henderson 11	*	354
C. C. Henderson 12	*	340
J. W. Shown 1	*	369
Deep Oil Dev. Co., Bryson 4	132	3067
Mullendore, Berry & Berry, R. R. Clayton 1-B	402	3030
Two Wells Oil Co., S. M. Jones 1	599	3232
KNOX COUNTY—		
Denver Prod. & Ref. Co., W. T. Waggoner Est. 1, sec 90	*	3752
MONTAGUE COUNTY—		
Arco Oil Co., Salmon 10-E	35	1143
Mullins & Weil, T. H. Hodges 1	*	1003
THROCKMORTON COUNTY—		
Doss et al, D. M. McKeichen 1, sec 2	*	467
Swain et al, A. McKeichen 1	*	490
WICHITA COUNTY—		
E. W. Carter, Tr., L. F. Ramming 1	*	396
Hawkins et al, Geo. Dobie 1	2	444
Geo. Dobie 2	6	425
Richard Kohlman et al, C. A. Mertins 14	*	545
D. G. Parker et al, Mrs. M. Parker 1, blk 22	*	1343
Perkins & Snider, John Serrien 9	96	1674
Geo. Proctor et al, Foster-Allen 12-A, sec 1	50	1550
Ryan Consolidated Pet. Corp., G. E. Nance 112	*	1310
J. L. Swanner et al, Williams-Parker 8, lot 3	3	700
WILBARGER COUNTY—		
Phillips Pet. Co., W. T. Waggoner Est. 197, sec 43	1500	3070
Waggoner Ref. Co., Waggoner Est. 8-CC	10	1113
YOUNG COUNTY—		
L. T. Burns et al, W. A. Rushing 11, sec 3401	10	902
Cable Oil Co., H. O. Prideaux 4	3	630
A. T. Strong et al, M. K. Graham 3, sec 3410	*	2630
White & Duncan, J. E. Morrison 1, sec 109	*	748

*Failures; †Junked; ¶Million cu. ft. gas.

TEXAS PANHANDLE
Completions

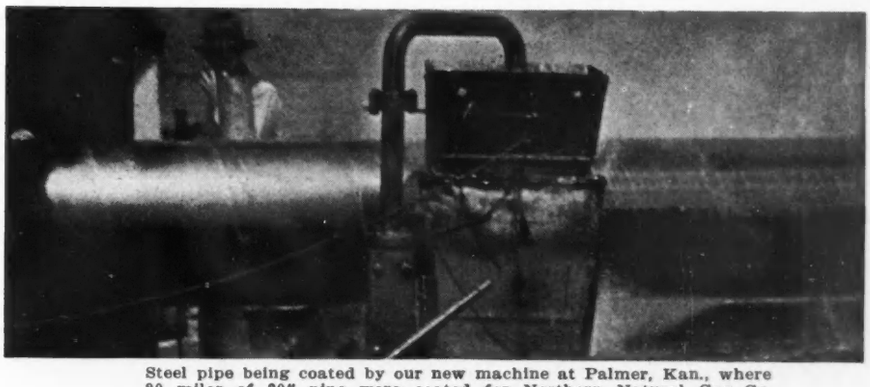
Company, Well and Location	Init. Prod. Bbls.	Depth
CARSON COUNTY—		
Empire, Magnolia Pet. Co., 4-E	377	3096
E. W. Means et al, E. Cooper 3	485	3045
GRAY COUNTY—		
F. W. Dye et al, A. Holmes 4	636	3270
Empire, W. E. Crow 5	519	3279
L. H. Cunningham 11	190	3316
Gibson Oil Corp., Combs-Worley 3	322	2991
Magnolia, R. J. Sailor 8	812	3265
Sinclair Prairie, P. A. Coomley 5	613	3205
Southern Pet. & Explor. Co., J. S. Baird 7	616	3257
HUTCHINSON COUNTY—		
Gulf, H. C. Pitcher 11	289	3213
Gulf & Panhandle Ref. Co., C. L. Dial 70	299	3067
W. W. Holmes et al, W. H. Lyall 2	20	2735
Marlow Oil Co., C. S. Terry 1	*	3242
Phillips, H. R. Staples 3	330	3217
Stanolind, R. C. Ware 11-B	256	3140
MOORE COUNTY—		
Continental, O. E. McDowell 1	¶65.8	3235
Phillips, Margaret-Ann (Strawn) 1	¶71.2	3235
J. Purdy 1	¶46.6	3310
Sturdy 1	¶61.6	3210
Shamrock O&G Corp., C. R. Jones 1, sec 166	¶13.6	3307
Alice Sneed 1	¶32.2	3010
Alice Sneed 2	¶31.8	2990
J. T. Sneed 3, sec 47	¶131.8	2665
Zwack-Barnsdall 1	¶116.2	3160
WHEELER COUNTY—		
Dumar O&G Co., H. Finley 1	¶39	1973
Ohio, Oil, M. Huselby 5	112	2442

*Failures; †Junked; ¶Million cu. ft. gas.

WEST TEXAS
Completions

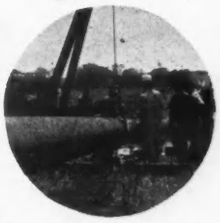
Company, Well and Location	Init. Prod. Bbls.	Depth
ANDREWS COUNTY (Means)—		
Humble, J. S. Means 23	583	4526
J. S. Means 25	847	4521
CRANE COUNTY (Gulf-McElroy)—		
Gulf, J. T. McElroy 152	351	2982
CRANE COUNTY (McCamey)—		
Dan Easter & M. F. Turner, Hughes-Stanolind 3	497	2453
Superior Oil Co. (Cal.), Hughes 6	695	2297
ECTOR (Foster)—		
Shell, J. E. Witcher 1	695	4194
York & Harper, Inc., H. C. Foster 4	581	4185
ECTOR COUNTY (Goldsmith)—		
Atlantic Ref., H. E. Cummins 1-B	246	4250
T. P. Land Trust 4-B	253	4282

[*See Next Page*]



Steel pipe being coated by our new machine at Palmer, Kan., where 20 miles of 20" pipe were coated for Northern Natural Gas Co.

MACHINE-COATING on-the-Job
assures perfect protection
for OIL *and* GAS PIPE LINES



At last! A machine-coating method — carried on in a yard shop set up near the right-of-way —that overcomes every difficulty formerly encountered in the field. Through the use of a new procedure and a new machine, designed by us, we are able to assume undivided responsibility for perfect pipe protection—handling every step of the work from manufacture of the coating to application on the job . . . and even the field joints.

"Production line" technique is used. Coating progresses faster than laying. Field hazards are eliminated, weather delays minimized. Bitumastic Enamel is applied in consistent thickness; no waste, drips, runs or festoons. Coating alone, or with bonded or unbonded felt wrapping, or with Cem-Wrap cement mortar is handled as one continuous operation. Work is thorough—coating field joints is included. An electric holiday detector, in the yard and in the field, makes certain that the coating is intact when pipe line is back filled.

The laying contractor is freed from any responsibility regarding coating application and will suffer no delays.

You can get this method of machine-coating in just one place—from the only manufacturer whose products have been in actual service on pipe lines long enough to prove their dependability. Yard shops set up anywhere for this economical . . . on-the-job . . . machine-coating.

No Other Coating Has Been In Use As Long As

BITUMASTIC

No Other Equals Its Performance Record

THERE IS NO SUBSTITUTE FOR EXPERIENCE

WAILES DOVE-HERMISTON CORPORATION

BOSTON PHILADELPHIA CLEVELAND CHICAGO TULSA SAN FRANCISCO LOS ANGELES

17 BATTERY PLACE, NEW YORK, N. Y.

[Continued from Page 179]

Company, Well and Location	Init. Prod. Bbls.	Depth
Bond Oil Corp.-L. C. Harrison, T. P. Land Trust 6	600	4262
Devonian Oil Co., C. Scharbauer 5-A	419	4232
Empire, H. E. Cummins 3-D	318	4247
Gulf, C. A. Goldsmith 29	670	4215
Humble, W. F. Cowden 1-B	1396	4220
Landreth Prod. Corp., H. E. Cummins 1-B	265	4232
C. Scharbauer 7-C	695	4235
C. Scharbauer 3-I	1314	4215
Ben F. Nysenwander, Jr. et al, C. Scharbauer 3	507	4219
ECTOR COUNTY (Harper)—		
Honolulu Oil Corp.-W. A. Black, E. F. Cowden 1-B	287	4252
ECTOR COUNTY (Judkins)—		
Gulf, W. E. Connell 12-B	15	3700
Sinclair Prairie, University 3, lse 60	231	3674
ECTOR COUNTY (North Cowden)—		
Landreth Prod. Corp.-Tide Water & Phillips, Holt 4	625	4245
Mid-Continent Pet. Corp., Blakeney 3	308	4253
Stanolind, J. M. Cowden 53	866	4289
HOWARD COUNTY—		
Superior Oil Corp., D. Roberts 35-B	2088	2981
JONES COUNTY—		
G. M. Gillespie et al, W. H. McKeever 1	*	2568
Iron Mountain Oil Co.-Humble, C. Olander 1	6300	3250
Sinclair Prairie, B. King 7-B	267	2215
LOVING COUNTY (Mason)—		
Stanolind, M. Kyle 1	*	3984
PECOS COUNTY (Masterson)—		
Samwan Oil Co., J. Masterson 4	271	1462
PECOS COUNTY (Netterville)—		
Worth Drlg. Co., Brandenburg 3	82	2360
PECOS COUNTY (Wildcat)—		
Humble, Mrs. E. M. Gray 1	*	6223
Tex-Mex Pet. Corp.-Magnolia Pet. Co., McKee 1	†	2724
UPTON COUNTY (Gulf-McElroy)—		
Gulf, McElroy 153	141	2983
UPTON COUNTY (McCamey)—		
Basin Oil Properties, M. L. Baker 3-D	977	2373
Roy R. Brown et al, M. C. Powell 1	*	2353
Brown-Hancock-Hines Oil Corp., Baker 1-C	960	2339
Cardinal Oil Co., Cordova Union 4-A	312	2288
Geo. E. Farley et al, Estep-Shell 3	230	2261
Gulf, G. H. Rogers 6	196	2263
Clay Johnson et al, T. E. Shirley 1-A	379	2167
Sergent-Rutter & Wilbanks (was Choate-Hogan), Elder 1	374	2299
The Texas Co., R. King 29	38	2478
UPTON COUNTY (Web-Ray)—		
Web-Ray Oil Co., Cordova Union 2-C	228	2107
WARD COUNTY—		
Amerada Pet. Corp., W. W. McDonald 7	489	2319
A. R. Eppenauer et al, University-Stanolind 5	1076	2739
Gulf, E. W. Estes 30	1082	2940
E. W. Estes 37	1016	2620
E. W. Estes 38	839	2620
G. T. Hall et al, A. Emory 2	*	2358
Pat Hill et al, Clements-Sun 16	37	2304
Magnolia, Geo. Sealy 1, sec 55	†	3049
Standard Oil Co. (Tex.)-Atlantic, McFarland 3, sec 29	528	2640
Texas Pacific Coal & Oil Co., H. James 20	347	2522
Tide Water Associated, W. D. Johnson 34	2200	2670
Westexas Oil & Roy. Co., University 2-C	400	2650
WINKLER COUNTY (Halley)—		
Skelly Oil Co., S. M. Halley 19	500	2985
WINKLER COUNTY (Henderson)—		
Empire, Daugherty 4-E	5000	3060
Humble, J. B. Walton 15-C	3500	3050
R. Olsen Oil Co.-Jeffers Oil Co., T. G. Hendrick 1	3000	3046
WINKLER COUNTY (Kermit)—		
Atlantic Ref., J. C. Maxwell, Lovett 7	1368	3075
Bert Fields et al, O. Clapp-Pure 14	1926	3110
O. Clapp-Pure 16	2097	3106
Gulf, Daugherty 50	556	3125
Daugherty 51	740	3020
Magnolia, J. B. Walton 91	314	3274
WINKLER COUNTY (Keystone)—		
The Falcon Co., McCutcheon-Humble 13	312	3400
Richardson Oil, Inc., Walton-Humble 2	143	3384
WINKLER COUNTY (Scarborough)—		
Empire, W. F. Scarborough 4	320	3000

*Failures; †Junked; ¶Million cu. ft. gas.

EAST TEXAS

Another drilling boom is sweeping East Texas.

* * *

Drilling contractors called on to aid line fights.

* * *

Spacing of derricks resembles townsite drilling.

Kilgore, Texas. — Another drilling boom is sweeping the East Texas field. A current survey of field operations reveals 100 rigs in service, with a rapid gain noted since the advance of the field's price posting last May 22. The eight-cent hike in price was initiated by a major to offset premiums paid by independent crude purchasers, and all buyers promptly followed. Before this price advance operators were keeping from 65 to 75 rigs in service.

Waging Line Fights

The renewed drilling program is reaching such proportions that important property owners must join the campaign for more wells as a defense measure. Officials of several majors have elected to go down the line and match offset leases well for well, having previously waged costly court contests in trying to enjoin exceptions to well spacing rules. These court battles have not been successful for the plaintiffs.

One Running 28 Rigs

One major has stepped up its drilling program to 28 operations. This concern previously has been content to regulate its drilling so as to use company-owned rigs exclusively. It is now engaging rotary contractors as rigs are available to expedite its campaign, as some of its wells are slated for leases that may not produce sufficient oil under proration to amortize the cost of completing additional producers.

The Texas Railroad Commission has been more lenient within the past several months in passing on applications for exceptions to field spacing rules than at any time in the history of the field, according to competent observers. Spacing of wells on small leases in various parts of the field resembles townsite drilling.

Rapid Pay Out

Under the new crude price schedule a marginal well in this field earns a gross revenue of $27 per day, or $6,855 annually. Cost of a completed well averages about $10,000. This comparatively rapid liquidation of initial cost of a producer is providing the incentive for crowding in additional wells, regardless of the over-riding royalty interests carried by the majority of the small properties.

Allowable production of the field is advancing to higher levels through the addition of more producers. On July 13 the field was prorated to 468,910 barrels from 23,075 wells, including 17,441 marginal and sub-marginal producers, according to railroad commission records. The average yield per well for the field is about 20.3 barrels daily, or a fraction of a barrel above the minimum prescribed by an act of the legislature for wells in this depth classification.

EAST TEXAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
JOINER AREA—		
Blackwell O&G Co., W. P. Moore 9 (27.86-ac)	8400	3642
British-American O. P. Co., Murphy 9 (38-ac)	8200	3641
F. W. Fischer et al, G. W. Eaton 19-B (21.72-ac)	3000	3780
Genecov & Sam Roosth, Pace-Bateman 8 (38.9-ac)	1800	3752
Gulf, G. G. Turner 33 (312.03-ac)	7000	3784
Humble, W. A. Mulliken 21 (166.4-ac)	4000	3765
Hunt Oil Co., J. M. Finney 8 (32-ac)	750	3700
Magnolia, Irion Wright 31 (81.9-ac)	8000	3678
A. V. Riley et al, Geo. Curbo 2 (20-ac)	160	3615
Spandsco Oil & Roy. Co., W. P. Brett 11 (47.78-ac)	2500	3721
Stanolind-Pure Oil Co., W. H. Siler 73 (983.53-ac)	*	3799
Sun, E. Seale 2 (71.6-ac)	750	3747
The Texas Co., L. J. Pinkston 11 (79.45-ac)	1500	3686
Tide Water Associated, J. M. Finney 6-A (40-ac)	2400	3706
KILGORE AREA—		
Adams & Lyles, L. Howard 11 (47.7-ac)	10,000	3646
Atlantic Ref., S. G. Andrews 18-A (111.3-ac)	9800	3684
M. B. Hughey 17-B-C (100.4 ac)	8000	3627
Central Commercial Oil Co., King-Shell 12 (44.4-ac)	1000	3709
Delta Drlg. Co., Hughey-Ross 4 (21-ac)	9000	3542
Gulf, G. W. Culver 35 (209.01-ac)	4500	3524
Hunter & Rowe, C. L. Still 11 (91.57-ac)	3000	3544
Magnolia, S. E. Brox 12 (84-ac)	6000	3660
D. Wills 15 (80-ac)	750	3684
Salmon Oil Co., W. Smith 8 (9.46-ac)	6200	3555
Shell, J. B. Watson 68 (385.2-ac)	8800	3615
Sinclair Prairie, A. A. King 20-B, Tr. 2 (111.8-ac)	7200	3490
A. A. King 22-B, Tr. 2 (111.8-ac)	7500	3492
Sun, A. G. Morton 25 (336.24-ac)	1500	3470
Terte & Binaggio Bros., Roger Lacy 1 (2.67-ac)	*	3508

Company, Well and Location	Init. Prod. Bbls.	Depth
LONGVIEW AREA—		
Arkansas Fuel Oil Co., Adrian-McCracy 12 (65.64-ac)	9200	3524
Atlantic Ref. J. W. Moore 72 (447¼-ac)	11,000	3642
Atlantic-Sun Oil Co., M. Hays 81 (448-ac)	10,400	3620
Barnsdall Oil Co.-Houston Oil Co., McGrede 14 (109-ac)	7500	3610
John Coates et al, N. Buie 5 (13½-ac)	6000	3596
General American Oil Co., T. B. Harris 10-B (45.77-ac)	7000	3514
Empire, J. W. Akin 18 (100-ac)	11,000	3629
L. A. Jeter 23 (122-ac)	8500	3571
Gilcrease Oil Co., A. Tooke 6-B (31.6-ac)	9500	3565
Magnolia, L. J. Everett 30 (166.96-ac)	9600	3667
Caddie Fisher 13 (147-ac)	1500	3466
R. B. White 24 (81-ac)	10,500	3547
McAlester Fuel Co., T. Snoddy 2 (3-ac)	5800	3595
Snowden & McSweeney Co., Bonner 12 (100-ac)	4000	3629
Sun, Mose Thomas 12 (72.2-ac)	8400	3560
Tide Water Associated, Bob Wood 6 (116-ac)	*	3533
ANDERSON COUNTY (Long Lake)—		
Tide Water-Seaboard Oil Corp., E. M. Jansing 1 (25.4-ac)	¶98	5326
FRANKIN COUNTY (Talco)—		
Magnolia-Humble, C. L. Owings 7 (79½-ac)	308	4294
HENDERSON COUNTY (Cayuga)—		
Cortex Pet. Co., I. A. Horton 4 (52-ac)	3600	4092
Sun, R. R. Watkins 2 (678-ac)	2300	4120
HILL COUNTY—		
A. N. Mabry et al, M. Holderman 1 (80.7-ac)	5	680
HOUSTON COUNTY (Grapeland)—		
American Liberty Oil Co. et al, W. L. Moody 1 (395.8-ac)	¶40	6169
TITUS COUNTY (Talco)—		
B. G. Byars & Pounds, W. T. Edwards 4-A (30-ac)	560	4300
W. B. Hinton et al, Pat Davis 3 (12.99-ac)	488	4334
L. H. Wilson 8 (119.51-ac)	519	4279
Humble, Mrs. L. Blackburn 9 (120.26-ac)	295	4309
A. P. King-Hughes 42 (1053.36-ac)	250	4321
Tide Water Associated, L. H. Wilson 4 (129.21-ac)	416	4285
VAN ZANDT COUNTY (Van)—		
Pure Oil, J. T. Petty 3 (101-ac)	500	2965
CASS COUNTY (Odessa)—		
Magnolia, W. M. Hall 7, Jno. Jackson sur	576	6050
United Gas, Thrower 1, J. S. Smith sur	120	6046
MARION COUNTY (Rodessa-Lodi)—		
Ark. La. Gas Co., Allen Houston 1, A. de los Santos Coy sur	541	6076

*Failures; †Junked; ¶Million cu. ft. gas.

New Live Oak Wildcats

Beeville.—A wildcatting campaign involving at least nine tests has been launched in Live Oak County to revive activity along the Pettus trend. Six of the wells are to be drilled on the Nichols Ranch in the northwestern portion of Live Oak County, where Pettus and Yegua sands will be tested above 2000 feet. Loma Oil Company, Ike Shelton, Joe Turner, John Pickett, Dave Gulley et al are involved in the transaction.

W. C. McBride, Inc., Henshaw Brothers and W. C. Nelson, and Loma Oil Company have commenced Like Oak County wildcats.

C. J. DAVIDSON, president of Cascade Petroleum Company and Davidson Drilling Company, Fort Worth, is vacationing in Wisconsin. Davidson is the co-discoverer of three oil fields in West Texas that are undergoing development.

SOUTH TEXAS

Deep Samfordyce sand extended 3000 feet.

* * *

Test indicates Sweden larger than thought.

* * *

Several coast wildcats show in Vicksburg.

Mission.—A 3000-foot northwest extension to the Barlow, or third Frio sand producing level in the Samfordyce field, Starr-Hidalgo counties, was being effected late in the week to greatly increase the importance of this producing zone. E. A. Graham and King Wood Oil Company had set casing around 3050 feet and was ready to drill plugs in Yturria Land and Live Stock Company 1, Porcion 38.

The test had run a drill stem test of the sand at 2995-3012 and recovered 1300 feet of pipe line oil under 100 pounds working pressure in 15 minutes through ¼- and ⅜-inch chokes. It then was cored ahead to take in the full sand section before completion.

This sand, about 250 feet below the main Samfordyce sand, is located on the northeast side of the field, trending northwest-southeast along the area which produces gas in the upper level. As a result of this extension with a reasonably thick sand body indicates that considerable work will be done along this section of the prolific shallow field.

To the northwest in Starr County, The Ricaby and South Ricaby fields, also Starr County, are continuing to provide prolific producers from the 1300 to 1750-foot sands in the Frio.

Brooks County's important wildcat, Standard of Texas' Mestina Oil & Gas Company 1, six miles north of Alta Mesa, was tied up with a bad fishing job. After perforating at 5147-60 feet, the well was being swabbed in, but lost swab in the hole. A sidewall packer on tubing then was run for a drill stem test, but the packer stuck around 5140 feet and now efforts are being made to cut out the tubing. It appears as though the hole will be lost in this horizon and a plug back job will be necessitated to one of the upper horizons. Same company was coring at 5453 feet in hard sandy shale with oil odor in Mestina 5, deep test in the main field.

La Blanca field, Hidalgo County, has two wells in the deep sand zone, Atlantic Refining Company's Lewis 1 was coring gas and distillate sand below 7560 feet, while Davenport and Swallow were at 7250 feet in Swallow 1.

Two wells have had hard luck in Cameron County. Stapper Petroleum Company quit Port Isabel 1 after sticking drill stem at 7777 feet and Ruez Morton Inc'.s United 1 is shut down at 6000 feet with pipe stuck. Shell Petroleum Corporation et al's Yturria 1, La Sal Viejo, in Cameron County, was testing about 7600 feet.

To test Navarro show in Wilson County

San Antonio.—Casing has been set at 3140 feet and will be gun perforated at about 3115 feet to test a Navarro sand oil showing in Maryland Oil Company et al's C. N. Tremmell 1, three miles northwest of Pandora in Wilson County. The test recently drilled to 5611 feet and was abandoned in Edwards limestone topped at 5555 feet.

The above test, located in M. May Survey, ran an electric formation tester after reaching the contract depth, which indicated the oil sand. Later, a side wall sampling device was run with indicated saturation at the Navarro level.

Wilson County has taken on a bright appearance the past several months with considerable leasing activity. At least three deep wells are planned, two being primarily to the Edwards limestone and one to the Trinity, all being about 6000-foot contracts.

In Frio County, Amerada Petroleum Corporation finally succeeded in recovering the drill pipe lost in Halff & Oppenheimer 8, and has set a string of 7-inch casing on bottom at 10,341 feet. This is the deepest well ever drilled in South Texas and likely will be carried to at least 11,000 feet unless oil is found in commercial quantities shallower. It topped the Travis Peak at 10,045 feet and is exploring Trinity sands. About 2½ miles southwest of the field, this company's Harrigan 1, has plugged back to the Austin chalk from 6410 feet and is swabbing a little oil. Top of the chalk was found at 5450 feet. Just north of the field, Halff & Oppenheimer 1, an abandoned Edwards limestone well, plugged back from 6341 feet to 5850 feet and has been completed in the chalk flowing 22 barrels of oil in 12 hours through ¾-inch choke with 75 pounds tubing pressure and 550 pounds casing pressure. It likely will continue testing.

Pagenkopf and Jamieson's Blackaller 1, in the northwestern portion of Frio County, is nearing a critical depth, coring for the Buda limestone below 2800 feet.

Dimmitt County's first 8000-foot test

is Wilcox Oil & Gas Company's Light Ranch 1, first of a series of four deep wells on this tract. The test had progressed to below 8020 feet and had not yet encountered the Austin chalk.

Shot and Acid Helps

A new method of completion in the Branyon Field, Caldwell County, opens a large amount of acreage in this shallow Austin chalk field to development. Artz and Horner's Hal Browne 2 made a small well after acidizing in the chalk, then shot the formation with 300 quarts of solidified nitro, the result being that it flowed 40 barrels per hour. The test found chalk 1895-2165 feet and is bottomed at 2220 feet. Small shots have been used heretofore, but this is the first heavy charge in the field.

A prolific crevice has been uncovered in the South Darst Creek field of Guadalupe County by Ramona Oil Company's Lay 3, which flowed slightly in excess of 100 barrels per hour through tubing after finding chalk at 2292-2382 feet and Eagleford at 2382-86 feet.

Vicksburg wildcat shows lead valley development

Corpus Christi. — Several Vicksburg sand tests in South Texas Gulf Coast were commanding attention late in the week following oil and gas showings. They give promise of either opening new fields or establishing deeper sands in already proven districts.

Magnolia Petroleum Company has set a string of 9⅝-inch casing at 6160 feet after drilling to 6162 feet in Seeligson 7, four miles southeast of Ella in Jim Wells County. This test had cored a distillate sand from 6118 feet to the total depth, and on several drill stem tests showed heavy gas pressure with some mud and distillate. The showing, likely near the base of the Frio, will not be tested at this time, but the well will drill ahead to the Cockfield around 9200 feet, then plugged back if production is not found shallower.

To the northeast in Nueces County, L. M. Lockhart's Ollie Purl has cleaned up a fishing job and is ready to core ahead from 7052 feet in sand topped 20 feet shallower. The test, on the western side of the Agua Dulce field, is attempting to establish oil production found in United Production Corporation's Harvey test recently. Several other deep wells are active in the general vicinity of the field.

Randon Oil Company and American Liberty Oil Company's J. Vincent 1, several miles northwest of Greta and in CEIP&M Survey No. 41, was drilling ahead after a drill stem test at 5729-68 feet developed 2900 feet of salt water with a scum of oil and light gas blow in 20 minutes, the sand having been logged at 5718-68 feet. This test is located about two miles south of Gulf Oil Corporation's old O'Connor gasser in Refugio County, completed at the same level several years ago. The showing was encountered at the contact of the Frio and Vicksburg.

Wildcat Active

A new wildcatting campaign embracing both Refugio and San Patricio counties, has been started during the past several weeks. In San Patricio County, five wildcats are active, one has been abandoned and another is being started, while in Refugio County, six wildcats are active and a couple more are projected to be commenced within the next several days.

Edwin M. Jones was down 7725 feet in Ben Shelton 1, on the east side of the Refugio field, while United Production Corporation's J. J. O'Brien 12, 2500 feet to the southwest, was waiting on cement after testing salt water through perforations at 7830-45 feet. Quintana Petroleum Corporation's Clement Heard 4, in the Greta-Tomoconnor district, is another Vicksburg test, being at 7000 feet and drilling ahead. Conroe Drilling Company's F. E. Kloesel, a hot wildcat prospect in the Bonnie View area, has been spudded.

Wellington Oil Company's attempt to establish oil production 7000 feet northwest of the Angelita field, San Patricio County, failed when J. F. Welder 1-B developed 1835 feet of salt water in 12 minutes at 5345-58 feet. Pan American Production Corporation also had a failure. It being White Point 1, in the White Point field, which was stopped at 6019 feet.

Southwest Sweden outpost shows in Cockfield

San Diego.—Finding gas and a slight oil odor in the Cockfield to the southwest of the Sweden field, Duval County, gives rise to possibilities of a larger field than was first indicated. Hiawatha Oil & Gas Company's M. M. Miller 2, 933 feet west and the same distance south of production, cored sand with oil odor at 5854-62 feet and on a drill stem test, seat at 5852 feet, rocked up 300 pounds pressure in three minutes and recovered about 275 feet of drilling mud. It is being completed.

The discovery well and another producer, offsetting to the south, are in the Cockfield. A west and east offset to the discovery as well as a northeast offset, also failed in the Cockfield sand.

About two-thirds mile to the northeast, Hiawatha Oil & Gas Company was coring ahead below 5780 feet in Southland Life Insurance Company 3, an effort to extend the field to the northeast and possibly merge it with production in the North Sweden field. Another outpost well, King Drilling Company's Parr Ranch 1, two miles east of the field, was shut down after running electric formation tester at 6531 feet.

Navarro Oil Company is continuing its efforts to test E. M. Rossi 1, one mile southwest of the North Sweden area, failed on three attempts to test sand at 5330-42 feet after plugging back from 6179 feet. Rumors are that a string of casing will be set and the well given a regular production test. It has been a disappointing operation in that the Cockfield was expected to produce in this well, its failure dampening prospects of the same sand being productive in the remainder of the North Sweden field.

Plugs had been drilled and production test was being attempted in C. C. Shumway's Shiner Ranch 10, NW NE NE Section 51, 10 miles south of Tilden in McMullen County. It is in the Government Wells sand at 1575-84 feet, where it showed oil. Attempts to test through the drill pipe failed and casing was set. Another McMullen County wildcat holding considerable attention is Howell Oil Company's Kate Martin 1, Section 213, in the southwestern portion of the county, which has set casing to test Yegua sand at 1200-14 feet, indicated on electric formation test. The well had drilled to 3510 feet in the Mount Selman.

Vernon Schimmell has commenced a four-well wildcatting campaign on the E. R. Hagist Ranch at the south end of McMullen County and the north end of Duval County. The first well in Section 467 has been spudded.

Lundell Defined

The newly discovered Lundell field, Duval County, was abruptly defined to the northeast by two failures in the Cole sector of the Jackson formation. Government Wells Oil Company's Lundell 3, north offset to the discovery oil well, found the sand six feet lower and went into water, while Magnolia Petroleum Company's Duval Ranch 2, several locations still farther northeast found the sand even lower and was carried to the Government Wells sand, where it was last reported to be testing. The Lundell test found sand at 1513-41 feet, carrying oil and likely some water, a cap at 1544-47 feet and oil sand 1544-47 feet, with oil odor, but carrying salt water.

SOUTH TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
SAN ANTONIO DISTRICT		
CALDWELL COUNTY—		
Fred J. Adams, W. M. Ellison 3-B, Dillard Cooper sur, (Branyon)..	70	2200
Artz & Horner, Hal Browne 2, J. R. Miller sur (Branyon) 1000		2220
Louis Crouch et al, L. Moses 1, Gerrin Hinds sur (Salt Flats)	30	2620
Hantho-Nelson, Inc., Union Central Life Ins. Co. 1, John A. Neill sur (Branyon)	680	2183
W. E. Housel et al, M. C. Driscoll 1, 580 ft nl, 400 ft wl 130-ac tr, James Berry sur	*	1544
Texas Gulf Pet. Co., L. K. Brown 1, C. M. Cannon sur (Buchanan)	100	2018
GUADALUPE COUNTY—		
Ramona Oil Co., Mrs. Katie Lay 3, Jose K. Davis sur (S. Darst Creek) 2575		2386
W. Scott Townsend, Tom Terrill 1, 200 ft nl and 1700 ft el of 111-ac tr Jesus Cantu sur (Nolte).....	*	2102
MEDINA COUNTY—		
Chas. Wagener, Medina Irr. Farms 6-A, M. W. Hewitt sur (Chicon Lake)	3	219
LAREDO DISTRICT		
DUVAL COUNTY—		
Arkansas Fuel Oil Co., Mabel Rossi 2, sec 10, Sweden subd, Santos Flores gr (N. Sweden)	750	4772
Benedum & Trees Oil Co., F. Vaello Puig, San Andres Gr. (N. Sweden)	450	4794
Central Producers, Inc., Herman Wendt 5-A, sur 43, (Government Wells)	33	2452
Cox & Hamon, Yoakam-Green 10-A, sur 118 (Hoffman)	125	2741
Gravis & Doran, F. Vaello Puig 3, San Andres Gr. (N. Sweden)....	475	4800
Humble, DCRC 5-D, sur 585 (Colmena)	245	1432
DCRC 6-D, sur 585 (Colmena)..	325	1454
Roos Brothers 5, BS&F sur (Labbe)	450	2823
Magnolia Pet. Co., DCRC 18, sec 100 (Piedre Lumbre)	175	2004
A. L. Labbe 6, H&GN sur No. 1 (Labbe)	550	2846
Peggy Sue Oil Co., S. Benavides 2, blk 23, O'Hern & Seacord subd, El Mesquite Gr (Cole-O'Hern)	*	2977
Shell Pet. Corp., Bishop Cattle Co. 12, sec 59 (Loma Novia)	225	2570
Sun Oil Co., Gasper Rodriguez 1, J. C. King sur (Seven Sisters)	*	3318

Company, Well and Location	Init. Prod. Bbls.	Depth
McMULLEN COUNTY—		
Harvey & Henderson, Nueces Land & Livestock Co. 1, 330 ft nl and wl of sec 105, BS&F sur.....	*	2000
STARR COUNTY—		
G. E. Dodd, Trustee, Ben D. Wood 4, blk 14, por 84 (S. Ricaby)....	260	1752
WEBB COUNTY—		
Bishop, Daubert & Lipscomb, A. M. Bruni 2, blk 18, sec 8, Foltz subd M. Arispe gr (Cole-Bruni)	*	3462
O. W. Killam, A. M. Bruni 54, blk 14, sur 8 (Cole-Bruni)	10	3437
ZAPATA COUNTY—		
Earl Callaway, Belen Bustamante 7-A, sh 8, Fansler Partition Comitas gr (Escobas)	32	1229
Cron & Gracy, M. Garza Est. 9, blk 10, C. A. Douglas sub, Comitas gr (Escobas)	12	1347
Nordan & Morris, C. Bustamante 28, sh 33, Fansler Part. Comitas gr (Escobas)	42	1158
C. Bustamante 29, sh 33, Fansler Part. Comitas gr (Escobas)	68	1146
CORPUS CHRISTI DISTRICT		
ARANSAS COUNTY—		
W. J. Collins & Broughton Wilkerson, McCampbell Ranch 1, blk 10 McCampbell subd. (McCampbell) owdd, old td 6560 ft.....	275	7121
BEE COUNTY—		
Salt Dome Oil Co., Tuleta Merchantile Co. 1, sec 10, Jose Maria Uranga gr (W. Tuleta)	25	3061
CAMERON COUNTY—		
Stapper Pet. Corp., Port Isabel Irr. Co. 1, 660 ft e, 330 ft s of center blk 17, Port Isabel Irr. Co. subd Espiritu Santo gr, sh 29, 30 and 31	†	7777
GOLIAD COUNTY—		
Dirks Brothers, Dr. G. W. Allen 1-A, 1320 ft nwl, 1980 ft nel 588-ac tr Obid Marshall sur (Slick)..	*	4550
JIM WELLS COUNTY—		
La Jita Corp., W. E. Pope 2-B, 466 ft sl and wl of n½ of sec 13, Richard King Farm Lots (Bentonville)	*	6261
NUECES COUNTY—		
C. Andrade, Fred Frank 6, CEIP&M Ry. (Saxet)	750	6941
William C. Brady, Pete Whelan 1, 56.9-ac tr, Villareal gr (Saxet Heights)	225	4051
Donico Prod. Co., V. M. Donigan 7, sec 7, Range 6 (Saxet), perf 4080-84 ft	875	4305
V. M. Donigan 9, sec 7, Range 6, (Saxet) perf 4450-54 ft.....	800	4501
Humble & Barnsdall, J. A. Robertson 3, lot 11, blk 56, Flour Bluff and Encinal Garden subd (Flour Bluff), perf 6633-36	¶5	6669
Potter & Snowden, Inc., L. R. Taggert 1, blk 5, sur 401 (Saxet)...	*	6004
Margaret Whelan 4, 57.3-ac lse, Villareal gr (Saxet Heights)	120	4095
Richardson Pet. Corp., A. C. Erwin 2, sur 500 (Saxet), perf 6900-10..	975	6958
Texon Drilling Co., Anton Ocker 10, sur 402 (Saxet)	450	4438
REFUGIO COUNTY—		
Cosmo Pet. Co., F. W. V. Heard 18, Refugio Town Tr. (Refugio)....	500	4920
Nordan & Morris, Tom O'Connor 8, James Hewittson sur (Tomoconnor)	1250	5920
Quintana Pet. Corp., Mrs. F. V. W. Heard 8, Thos. H. Webb sur (Tomoconnor)	3000	5925
Tom O'Connor 53-A, J. M. Swisher sur (Tomoconnor)	2500	6000
United Prod. Co., Fannie Heard 17, Refugio Town Tract sur (Refugio)	350	4930
M. F. Lambert 55, J. M. Swisher sur (Tomoconnor)	1200	5915
SAN PATRICIO COUNTY—		
Humble, J. W. Mayo 25, J. H. W. Ottman sur (Taft), perf 4351-58½ ft	625	4362
Pan American Prod. Co., White Point Dev. Co. 1, Wm. T. Bell sur (White Point)	*	6019
VICTORIA COUNTY—		
Barnsdall & American Liberty, Pickering & Roos 19, SA&MG sur (Placedo)	420	4775
Haynes B. Owenby, T. P. Traylor 6, SA&MG sur (Placedo) 1750		4771
Transwestern Oil Co., A. M. McFaddin 3, 3000 ft nw of No. 2 and 3000 ft sl of lse in J. Viarin sur (McFaddin) perf 5193-96 ft.	¶50	6231

*Failures; †Junked; ¶Million cu. ft. gas.

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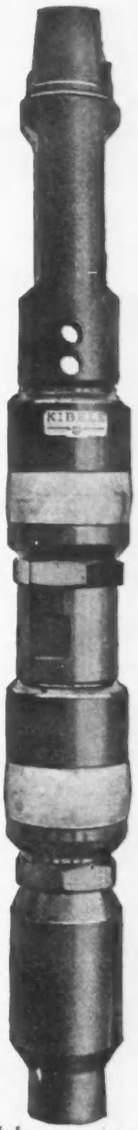

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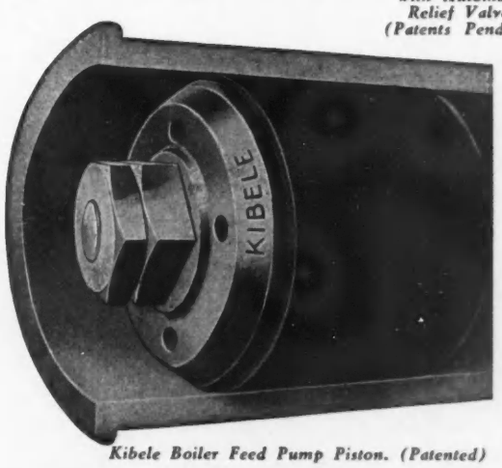

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TEXAS GULF COAST

Friendswood discovery has thick sand section.

* * *

Hastings production extended half-mile south.

* * *

Segno test cuts through fault and abandons.

Houston.—One hundred and ninety-one feet of oil sand, the greatest amount found in any Gulf Coast well since discovery of Hastings, was the record chalked up July 10 by Humble Oil & Refining Company's Settegast 1, the first producer for Friendswood prospect, Harris County. Only 7 feet of shale broke the solid Frio pay logged at 5811 to 6009 feet. Settegast 1 poured 650 barrels of 30.1 gravity clean oil into storage tanks the first day through ¼-inch choke, registering a tubing and casing pressure of 850 pounds.

Important tops on the Perry and Austin Survey discovery test were: Discorbis, 5116 feet; Heterostegina, 5470 feet; and Frio, 5811 feet. Seven-inch casing was set at the plugged back depth of 6009 feet after the hole had been cored to 6040 feet.

Will Be Faulted

Friendswood will be faulted, according to the dope. Reliable information has it the discovery well is 400 feet higher than geophysics indicated it would be. The new strike is between Genoa gas field and Quaker City Oil Company's Goar 1, a wildcat which was abandoned at 6758 feet with no important showings. Goar 1 ran more than 200 feet lower than Settegast 1, considering the former is two miles southwest. Settegast 1 is also about 200 feet higher than West Production Company's Woodburn 1, located to the north, which topped the Frio at 5995 feet on a calculated elevation of 45 feet.

Geological opinion differs on Friendswood. Some believe it is part of Hastings, which lies three miles to the southwest. Others disagree. Some believe there is no graben between the two areas. Some are of the opinion Friendswood is on the Genoa structure. But regardless of which of these opinions is correct, if Friendswood is proven to be on a separate structure it will shatter the theory that a Gulf Coast field cannot be found less than five miles from proven acreage.

High Lease Prices

It is reported, but not confirmed, that Humble Oil & Refining Company recently paid $5000 per acre, part oil and part cash, for a 31-acre tract northeast of the discovery well. If this is so, it represents the highest price for a lease ever paid in the Gulf Coast when the transaction was completed prior to completion of the discovery well. Humble has most of the acreage around the prospect concentrated in a 3000-acre block, although Glenn H. McCarthy and The Texas Company possibly may be in on the play too.

Pipe line outlet for the field is provided by an eight-inch line of Humble Pipe Line Company which passes within 1000 feet of Settegast 1.

Glenn H. McCarthy has made location for L. D. Whitcomb 1, 330 feet south of the north line and 330 feet west of the east line of Block 4, Sherman Subdivision, Thos. Choate Survey, south of the discovery well.

Since the discovery well was brought in July 10 the lease play has shifted north and northwest approximately five miles. Acreage is reported bringing $100 per acre in that area. To the east the play is as far as the Houston-Galveston highway which borders the J. M. West ranch of 9000 acres. Two domes have been reported on this ranch.

Hastings Extended Half Mile South

Hastings was extended over ½-mile south July 15 when Stanolind Oil & Gas Company completed Moore 1-C, R. A. McGee Survey. The well came in flowing 149.21 barrels on the first 5½-hour gauge through ¼-inch choke from Frio at 6080 feet. Tubing and casing pressure of 900 pounds. The oil sand was topped at 5974 feet. This completion adds several hundred more productive acres to Hastings, informed opinion being that the field will go another half-mile south. No new locations have been made in the southern part of the field.

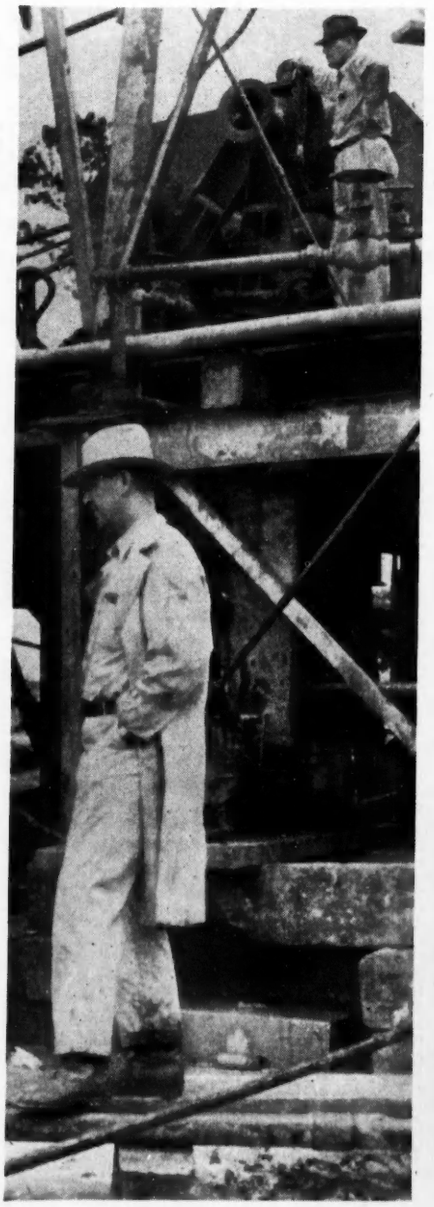
On the southeast side of Hastings, Humble Oil & Refining Company completed R. D. Haden 1, R. Hoppel Survey, flowing 19 barrels per hour through a ¼-inch choke after perforating casing with 24 shots from 6110 to 6120 feet, after being drilled to 6125 feet; sand was logged at 6100 feet. This is one of the few wells at Hastings to be perforated.

Old Ocean Well Getting Deep

Harrison & Abercrombie's Bernard 4, C. Breen Survey, Old Ocean, Brazoria County, is coring below 10,765 feet in broken formation showing oil. It has cored around 900 feet of broken formation which contained oil shows. This is the deepest hole drilled at Old Ocean and will be carried down to an undetermined depth. There is no doubt but what the well will make a producer in formations below 10,000 feet.

East of Bonney in Brazoria County, Jack Frazier made location for Temple Lumber Company 1, 1650 feet west and 330 feet south of the northeast corner of H. & T. B. Section 25, Abstract 252.

Northwest of production at Magnet, Wharton County, Humble Oil & Refining Company attempted to complete Cockburn 1, J. Castleman Survey, but the hole bridged at 1600 feet. The hole was drilled to 5550 feet in sand showing oil and seven-inch casing set at 5949 feet, was perforated with 18 shots from 5540 to 5547 feet. The well was washed



B. B. BELL

This toolpusher for Humble Oil & Refining Company at Hastings, helped in completion of the Friendswood discovery.

and then swabbed and while swabbing the hole bridged.

Humble Oil & Refining Company has made location for Cockburn 2, 933 feet north of Cockburn 1. Development northwest of Magnet and southeast Withers, indicate the two fields may join.

Two other wells at Magnet are setting casing. Atlantic Refining Company's Cockburn 2, down to 5550 feet in oil sand, is running seven-inch casing to 5542 feet. Top of the sand was logged at 5525 feet. Texas Crusader Oil Company's Sweet 2 was down to 5555 feet and preparing to set casing at 5548 feet. Sand showing oil was logged at 5527 to 5532 feet.

Humble Cuts Fault at Segno

Humble Oil & Refining Company's Kirby Lumber Company 5-B, southeast side of Segno, north of Kirby Lumber Company 2-B and 3-B, M. Victor Survey, Polk County, cut a fault and was abandoned at 5540 feet. A drill-stem test of sands of 5229 to 5342 feet recovered 360 feet of drilling mud and 2500 feet of salt water and no pressure through quarter-inch chokes in 18 minutes. The company made location for Kirby Lumber Company B-6, 1399 feet from the west line and 933 feet south of a line between Kirby Lumber Company B-4 and B-3, M. Victor Survey, Polk County.

J. K. Dorrance completed S. F. Wing 2 at Segno, flowing 10 barrels per hour through ¼-inch choke with a tubing pressure of 450 pounds at 5208 feet after plugging back from 5302 feet.

La Quinta Oil Company was preparing to make a test on W. G. Wing 3, I. & G. N. Section 15, after drilling below 5274 feet where seven-inch casing was set.

Two new wildcat locations were made in Liberty County last week. O. C. Garvey plans J. H. Weaver 1, 360 feet west and 1102 feet south from the most northerly northeast corner of a 400-acre tract in the J. Devers Survey, Abstract 170, northwest of Cleveland. J. G. Mayo et al will drill Gibbs Brothers 1, 2400 feet from the east line and 2200 feet from the north line of a 1437-acre tract in the J. D. Martinez Survey, Abstract 64.

The best well yet completed on the north and east side at West Beaumont, Jefferson County, is Stanolind Oil & Gas Company's McCormick 3, H. Williams Survey, which came in flowing 569 barrels daily through ¼-inch choke with a tubing pressure of 1050 pounds and a casing pressure of 450 pounds; gas-oil ratio 450 to 1. It is producing from Miocene sands at 5400 feet. Oil sand was logged at 5377 feet and seven-inch casing was set at 5366 feet.

H. B. Hebert and S. Smith drilled a dry hole in the Pine Island area, Jef-

Scouts, geologists and engineers were on the job July 10 when Humble Oil & Refining Company brought in Settegast 1, discovery well at Friendswood. From left to right: C. J. Foster, civil engineer, Humble Oil & Refining Company; R. L. Dacey, geologist, Humble Oil & Refining Company; Sunny Roberts, scout, Gulf Oil Corporation; Joe Mass, scout for The Texas Company, and Douglas Bell, geologist for Humble Oil & Refining Company.

No wonder these men have smiling faces. They have just witnessed the first flow of oil from Humble Oil & Refining Company's Settegast 1, which opened the Friendswood area. From left to right: E. A. Payne, with back turned, the drilling contractor; J. E. Wheatley, superintendent at Hastings; G. B. Corless, Gulf Coast division superintendent, and Dr. L. W. Blau, head of the production research department, the latter three men are with Humble Oil & Refining Company.

TEXAS GULF COAST Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
AMELIA—		
Humble, Crook 1	677	6779
Dooley 1	*	lcn.
Peveto 7	680	6778
Tyrell Combest 5	287	6787
Veglica et al 1	*	lcn.
ANAHUAC—		
Humble, Middleton D-1	*	7753
Shaver 5	109	7127
CLAY CREEK—		
Oak Oil Co., Cockrell 1	77	1354
ESPERSON—		
General Crude, Moores Bluff 30	*	4174
HASTINGS—		
Humble, Haden 1	456	6125
Stanolind, Curkett 3	553	6060
Edwards 4	641	6080
Grote 6	644	6080
Hutcheson 4	576	6080
Moore C-1	648	6080
HIGH ISLAND—		
Stanolind, Smith B-10	136	4949
HULL—		
W. B. Flynn, Abel 22	30	450
Texas Co., Hannah Fee 7	696	5427
LOUISE—		
Pure, Cochran 1	*	5160
MANVEL—		
Texas Co., Belcher B-25	103	5150
NOME—		
Sun, Paggi 9	302	6040
SEGNO—		
J. K. Dorrance, Wing 2	240	5208
Gulf, Regan 1	*	6013
Humble, Kirby B-5	*	5540
SOUTH HOUSTON—		
Stanolind, First National Bank 7	*	4053
SPINDLETOP—		
Stanolind, McFadden 147	330	2796
TOMBALL—		
Humble, Burlington & Rock Island 2	456	5572
C. W. Juergens B-2	1008	5550
WEST BEAUMONT—		
Stanolind, W. P. McCormack 3	569	5400
HARRIS COUNTY—		
Humble, Settegast 1, Friendswood prospect, Perry & Austin sur.	650	6040
Texas Gulf Producing Co., Gillispie 1, Aldine area, S. Contreras sur.	*	8084
JEFFERSON COUNTY—		
H. B. Hebert & S. Smith, Broussard & Hebert 1, Pine Island area, J. W. McGattey sur	*	7360

*Failures; †Junked; ¶Million cu. ft. gas.

ferson County. Broussard Hebert 1 was drilled to 7360 feet in salt water sand. The wildcat is in the J. W. McGaffey Survey.

Over two miles southeast of production at Anahuac, Humble Oil & Refining Company abandoned Middleton D-1, H. & T. B. Section 110, at 7753 feet in salt water sand.

LEE TIMBERLAKE, operator in Arkansas and North Louisiana, has been appointed deputy agent of the Arkansas Board of Conservation in charge of the new Rodessa extension of Miller County and has opened an office at 204 State National Bank Building, Texarkana. Timberlake will assist C. E. Harris, State Conservation Agent, who maintains headquarters at El Dorado.

SOUTH LOUISIANA

Eleven coastal wildcats are at critical depths.

* * *

Venice Dome wildcat looks like field opener.

Lake Charles. — Eleven of the 31 wildcats in the Louisiana Gulf Coast now in operation are at critical depths and are attracting considerable attention among major and independent oil companies operating in this area.

Probably the most important wildcat in the coastal country of Louisiana is Amerada Petroleum Corporation and Louisiana Land & Exploration Company's State 1, Black Prince Island prospect, Section 13-15s-20e, St. Charles Parish. It discovered a new salt dome last week when the bit penetrated salt at 8632 feet. Salt was cored down to 8638 feet. State 1 will be drilled deeper into the salt formation to see if the dome is of mushroom type. This is the first salt dome in St. Charles Parish.

To Test at Venice

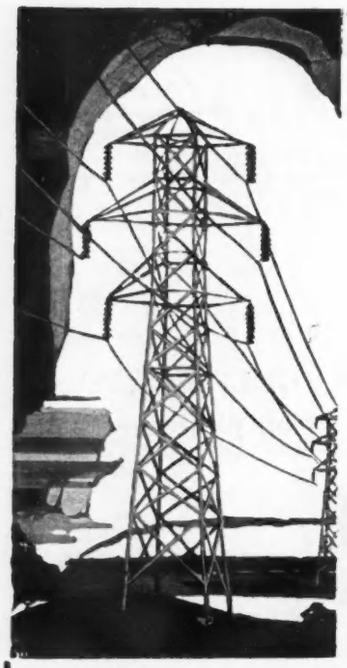
Tide Water Associated Oil Company was preparing to make a production test on Manhatten Fruit Company 3, Section 26-21s-30e, at Venice dome, a Plaquemines Parish prospect. Seven-inch casing has been cemented at 7190 feet. Twenty-eight feet of oil sand was logged from 7180 to 7208 feet. Indications are the well will open a new oil field in the Louisiana Gulf Coast.

While trying to run a string of 5-inch casing with 14 feet of screen on bottom at 7069 feet in Lake Peigneur 414, Jefferson Island dome, 12s-5e, Iberia Parish, Jefferson Lake Oil Company stuck the pipe at 6686 feet and was forced to cement there. At the end of the week the operators were waiting on cement to set before the casing is perforated for a production test. Jefferson Lake Oil Company's Lake Peigneur 414 was drilled and cored to 7069 feet in sand showing oil. Top of the broken formation was logged at 7056 feet and oil sand was topped at 7060

SOUTH LOUISIANA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
JENNINGS—		
Superior, Leckelt 4	495	6915
LAFITTE—		
Texas Co., Rigolets 7	1382	10,240
WEST HACKBERRY—		
W. T. Burton, Lewis 2	310	4232
Vincent	510	4461
JEFFERSON DAVIS PARISH—		
Louisiana Crusader Oil Co., Langley 1, Fenton area, 36-7s-5w	*	9045

*Failures; †Junked; ¶Million cu. ft. gas.



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feet. However, after plugging back from 7060 feet in salt, the hole was sidetracked at 5434 feet, and since drilling in a sidetracked hole sand and shale showing oil has been cored from 6480 feet to the bottom of the sidetracked hole.

On the Hanszen prospect, Cameron Parish, Humble Oil & Refining Company's Bel Hanszen 1, Section 5-12s-6w, was coring in shale at 8936 feet after logging sand and shale with an odor of oil and gas. Bel Hanszen 1 was cored from 8633 to 8638 feet with an odor of oil and gas, from 8638 to 8641 feet with an odor of oil, and from 8646 to 8656 feet with an odor of oil and gas. The well will be drilled to 10,000 feet, it was reported.

Cores Seven Feet of Sand

Humble Oil & Refining Company's Federal Land Bank 1, North Crowley prospect, Section 34-8s-1e, Acadia Parish, was coring ahead 8445 feet after coring 7 feet of saturated oil sand and 1 foot of shale from 8398 to 8408 feet. Two drill stem tests of the sand failed. However, a drill stem test from 8337 to 8348 feet recovered 2 thribbles of 35.6 gravity oil and 1 thribble of mud and water with a brackish taste. This wildcat has already indicated it would open a new oil field in the South Louisiana Coastal country when a drill stem test at 8106 feet showed 1170 feet of pipe line oil.

East of Tepetate field, Acadia Parish, John Mayo et al's Bank of Commerce 1, Section 19-7s-1e, was down to 8559 feet in shale last week after topping a dry sand at 8551 feet. This sand is equivalent to the Ortego sand found at Tepetate field, Acadia Parish.

Test for Churchpoint

In the Churchpoint area and east of Woodley Petroleum Company's two deep dry holes, Acadia Parish, J. G. Markley et al announced location for a wildcat, Ed. Daigle Farm Company 1, 1980 feet north and 750 feet east of the SWc SE¼ of Section 19-7s-2e, Acadia Parish.

Louisiana Crusader Oil Company's Langley 1 was abandoned last week. The wildcat showed salt water on a test at 6552 feet. Casing was perforated with 10 shots from 6540 to 6552 feet and a drill stem test showed 55 stands of salt water with an odor of oil. The well also showed a 25-pound pressure. Langley 1 has attracted attention for some time, and when the hole was drilled to 9045 feet and 7-inch casing was set at 9026 feet, it was thought by many that the well stood a good chance of becoming a gas well at least. Several tests were made up the hole from 9045 feet, but each showed salt water.

A half mile west of Stanolind Oil & Gas Company's Calcasieu National Bank 1-B, which blew out at 9100 feet, the same operator's Calcasieu National 2-B, Section 28-7s-3w, Jefferson Davis Parish, China or Elton prospect, was shut down at 9100 feet waiting on orders. The test has already cored sand and shale showing gas. The cores were taken from 8945 to 8950 feet, 8950 to 8969 feet, and from 8965 to 8995 feet.

Coring at Villa Platte

In Evangeline Parish, Continental Oil Company's Tate 1, Villa Platte area, Section 44-3s-2e, was coring in sand with no shows at 5205 feet at the end of the week.

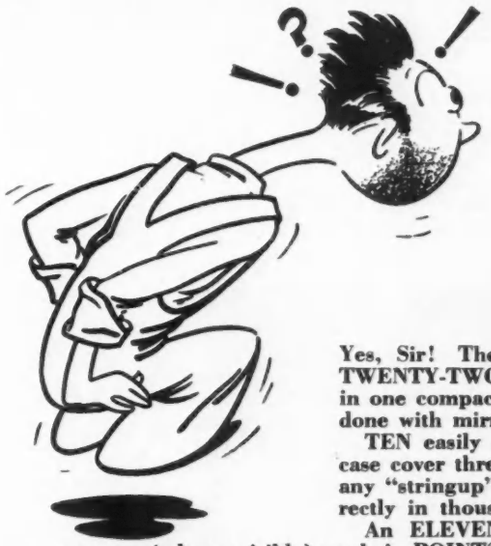
Coastal Minerals Development Company's Purdy Hass 1, Section 25-2n-3e, Avoyelles Parish, was drilling in shale at 3812 feet after encountering a show of gas in lime formation at 3756 feet.

Shell Petroleum Corporation's Realty Operator's 2-B, 800 feet north of the discovery well, Gibson field, Section 18-17s-15e, Terrebonne Parish, was drilling in shale at 9019 feet after making a 3-minute drill stem test which showed 42 barrels of gas cut mud along with a 500-pound pressure through ¼-inch choke on top and ⅜-inch choke on bottom of the testing tool. The drill stem test was made from 8629 to 8641 feet.

East Texas border fields get increase in allowables

Marshall.—Two East Texas border county oil fields were given an increased allowable last week by the Texas Railroad Commission. Waskom, Harrison County, was given a daily allowable of 159 barrels for 12 oil wells combined, a boost of 69 barrels over the June figure, and Bethany, Panola County, with 6 wells, was given 44 barrels, an increase over June of 17 barrels. The Marion County, Texas, offshoot of the old Pine Island field kept the same allowable, which is 140 barrels for its 16 stripper wells. Shelbyville, Shelby County, with one producer, received an allowable of 30 barrels.

WHAT! 22 GUAGES IN THAT LITTLE INSTRUMENT



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NORTH LOUISIANA

Interest in Marion County possibilities renewed.

* * *

Deepest North Louisiana hole quits in Permian salt.

Shreveport.—The consistency of the saturated formation in the Gloyd-Mitchell horizons in the Lodi, Marion County, Texas, offshoot of Rodessa, 8½ miles southwest of the main part of the field, has fired renewed interest not only in that particular spot but 5½ miles farther southwest near Jefferson, where one oil well has been completed.

The Lodi area, opened several weeks ago by The Hunter Company's E. W. Fonda 1, A. de los Santos Coy Survey, added its third oil producer in Arkansas-Louisiana Gas Company's Allen Houston 1, same survey, completed from 36 feet of saturation at 6076 feet, flowing 38 barrels of oil per hour and making 250,000 feet of gas daily through ½-inch tubing choke with casing pressure 1100 pounds and tubing pressure, 280 pounds. Gas-oil ratio was 836 to 1.

Another well was testing late last week and still another had reached the producing horizon, all in this headright. The well testing is Mid-Continent Petroleum Company's Sory 1, at 6101 feet, being an east offset to The Hunter Company's E. W. Fonda 1. The test reaching the producing horizon is Fohs Oil Company's Mary McReynolds 1, drilling close to 6000 feet after topping first anhydrite at 5298 feet.

The Hunter Company last week made four new locations in this area.

In the R. Bennington Survey, Marion County, where Holcomb, Thomasson and associates completed Lizzie Henderson 1, new locations have been made by Shell Petroleum Corporation, Gulf Oil Corporation, and by Holcomb & Thomasson, located 900 feet north of the producer, 1500 feet west of the producer and 1700 feet northwest of the producer, respectively.

Plan re-entering Miller test that missed production

Shreveport.—Holcomb & Thomasson have closed a deal with James A. Noe and Mrs. O. K. Allen for an interest in the latter's 1275-acre tract in Miller County, Arkansas, on which a 6514-foot test on Embree Heirs land was drilled in Section 11-20-28, in the early days of Rodessa, the hole being abandoned as dry.

With recent completion of a Rodessa extension well in Miller County, it was decided to go back into the abandoned hole and set six-inch casing at top of the Gloyd formation topped at 5996 feet. This test had eight-inch casing set at 3200 feet, logged upper anhydrite stringer at 5230 feet, logged massive anhydrite from 5497 to 5741 feet, logged last anhydrite stringer at 5812-40 feet and logged Hill sand at 5885 to 5904 feet with pink anhydrite from 5971 to 5986 feet; elevation is 215 feet, derrick floor.

In the Miller County extension of Rodessa six tests are now drilling and seven others are rigging. Four of the drilling operations are by Freeman W. Burford. None has reached an interesting depth.

W. M. Layton, who is drilling one of the Miller tests, and who several months ago secured permits for several wells along the Arkansas-Louisiana line, is planning to lay a 6-inch gas line to this extension from a gas well he owns in the Caddo Parish part of Rodessa. Last week he bought the interest of W. A. Tharpe in the latter test.

The latest gauge of W. L. McClanahan and associates' Capps 1, NE SW 11-20-28, the extension well showed it made 480 barrels in 18 hours through ⅜-inch choke. A previous 24-hour gauge was 407 barrels.

Grogan district oil coming from Lower Paluxy member

Shreveport.—Pullman Oil Company's Ramsey A-1, SE NW 36-11n-11w, De Soto Parish, discovery well of the new Grogan district, is producing from a lower phase of the Paluxy that the old Bull Bayou field, 6 miles to the northeast of it, produces from, according to determinations made of the two horizons.

The new well is averaging around 300 barrels daily, one 24-hour gauge last week showing 294 barrels in 24 hours through ¼-inch choke, with casing pressure 75 pounds. Basic sediment and water is 8 percent.

The regular Bull Bayou producing horizon carries water in the new area, but immediately under it comes the lower phase of the Ramsey producing horizon, so that hereafter operators will be able to case off all of the water sand. Casing in the present test is set 5 feet too high, is the belief. Top of the Ramsey producing horizon is 150 feet lower than the top of the Paluxy at Bull Bayou and it is on a separate structure.

Seven new locations have been made to July 14 in this new field.

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Lisbon field needs more pipe line facilities

Shreveport. — Lisbon field is facing the need of additional pipe line facilities. Only one line, that of Gulf Pipeline Company, is serving the field, which has 55 oil wells, and lease storage is becoming congested.

Total cumulative production from 48 wells to July 1 at Lisbon was 528,821 barrels, and a total for the preceding 7-day period before then of 99,500 barrels.

United Gas Public Service Company has farmed out some of its leases at Lisbon northeast of producing limits of the field to G. H. Vaughn and M. H. Marr, who have been assigned north half SW 29-21n-4w, and south half NE and east half SE 30-21n-4w, for the protection of all offsets and one-eighth of production, United retaining all gas rights. Gulf Oil Corporation recently bought the west half of SE 21-21n-4w, and H. C. Miller leased SE NE 32-21n-4w. Bert Kouns of Shreveport leased south half SE and SE SW 20-20n-5w, and south half SW 21-20n-5w, north of the Sugar Creek field and in the direction of Lisbon.

Between 30 and 40 car loads of commercial mud were used in killing Ohio Oil Company's A. J. Hodges 2 in the Cotton Valley field of North Louisiana. A leak in the casing permitted gas to escape, which channeled and resulted in an old abandoned well a quarter of a mile away cratering.

Commercial mud was rushed to the scene by special train and all available trucks. Additional mud pumps were placed in operation.

One of the accompanying photographs shows empty mud sacks around the scene of activity, and the other shows a part of the battery of slush pumps forcing mud into the well.

—Photos courtesy Pelican Well Tool & Supply Company.

Leasing In De Soto

In DoSoto Parish, Arkansas-Louisiana Gas Company is taking some leases in Township 15 north, Range 14 west, in the north end of the parish. In Red River Parish, where Glassell and Lee Whitehurst are drilling LeLong 1, Section 25-12n-11w, as an 8000-foot test south of Bull Bayou, spreads in the block have been taken by Standard Oil Company of Louisiana, Ohio Oil Company, Tidewater Associated Oil Company and The Texas Company.

In Bienville Parish in Township 16 north, Range 10 west, where there has been considerable demand for leases recently, Sinclair Prairie leased 450 acres in the Lake Bisteneau area. Fred J. Core of Houston leased 160 acres in Section 2-20n-10w, Webster Parish from W. E. Hall and H. M. Harrell.

H. S. Holloway on a 1000-acre block around Section 19-10n-1e, Winn Parish, will drill a 2000-foot test. In the same parish, Mid-Continent Petroleum Company is leasing around Section 2-12-3w.

JOHN KORP, 64, West Central Texas operator, and president of Abilene Pipe & Supply Company and Acme Pipe & Supply Company, located at Abilene and Albany, respectively, died July 12 at his residence in Abilene.

Rodessa's first Permian lime test unproductive

Shreveport.—Rodessa's first test of Permian lime proved non-productive last week when R. W. Norton's Payne 1, SE SE 27-23n-16w, in the gas-producing part of that field, after plugging back to 10,600 feet in the "big lime" section was tested for several days with only a slight show of oil and gas and was later plugged back to 9454 feet for a test. The well when rocked at 10,600 feet with high pressure gas flowed mainly wash water with occasional slugs of mud.

This test topped Permian salt at 11,470 feet and penetrated the salt for 16 feet before being plugged back. It is the deepest test in footage ever drilled in North Louisiana, Arkansas, or East Texas.

Norton has perforated casing at 8970 to 9010 feet, and Thursday was preparing to test at that horizon.

Blackwell Oil & Gas Company's Neugent 3, NE SE 8-23n-15w, Caddo Parish, on the northeast edge of the field, which logged top of the Petitt, basal Glen Rose, at 6651 feet (elevation 324 feet) and reported a showing in top of Travis Peak at 7048 feet, was awaiting arrival of casing.

Shreveport.—Arkansas-Louisiana Gas Company has announced plans for immediate construction of a 30,000,000-cubic-foot daily gasoline absorption plant in the Simsboro gas-distillate field, Lincoln Parish, which will process gas from both Simsboro and from the Driscoll area, Bienville Parish, gas rights to the four wells in the two areas being owned by Arkansas-Louisiana Gas Company.

Shreveport.—Phillips Petroleum Company is laying a 4-inch line from the polymerization plant it is building in the William R. Meyers Survey, Cass County side of Rodessa, to the vicinity of Lodi, Marion County, a distance of 10 miles. A loading rack will be erected near Lodi. The company has contracted for gas from a number of wells in the southwest end of Rodessa.

NORTH LOUISIANA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CADDO PARISH (Pine Island)—		
W. D. Ambrose, Pender 1, 11-20n-15w	50	2215
Pender B-1, 11-20n-15w	300	2201
Hancock & Uhlman, Helpman 1, 16-21n-16w	25	1004
Tom Pappas et al, Spell 2, 28-21n-15w	300	1652
Stanolind, Slattery 12, 27-21n-15w	50	1667
Surf Oil Co., Self 2, 10-20n-15w	50	2204
CLAIBORNE PARISH (Lisbon)—		
Magnolia, S. M. English 3, 31-21n-4w	251	5283
DE SOTO PARISH—		
Roy M. Sundby et al, A. P. Garland 1, 7-14n-14w	*	5548
LINCOLN PARISH (Lisbon)—		
Lyons & Neely, E. P. Taylor 1, 6-20n-4w	450	5368
OUACHITA PARISH (Monroe)—		
Hope Production Co., Cole Hrs. 9, 38-19n-3e	¶2	2171
SABINE PARISH (Converse)—		
Producers O&G Co., Mary Gains 1, 30-9n-13w	*	2100
W. G. Ray Drlg. Co., Burkett 4, 10-9n-13w	8	2001
UNION PARISH (Monroe)—		
Interstate Nat. Gas Co., Fee 65, 19-21n-4e	¶12	2127
WEBSTER PARISH (Cotton Valley)—		
Magnolia, D. G. Cox 2, 22-21n-10w	725	8244

*Failures; †Junked; ¶Million cu. ft. gas.

Lenticularity of Schuler sands proved by tests

El Dorado, Ark.—Drilling operations in the Schuler district last week that failed to pick up producing horizons of sufficient value to produce apparently gave further proof of the lenticularity of the sands carrying the oil in that field.

Not only do the drilling operations that missed the producing horizons show this, but a production decline in some of the field's four producers also indicates it.

One-half mile north of production, Alice Sidney Oil Company's Powledge 1, SW SE 7-18-17, was coring at 5875 feet without having picked up anything of promise. It may be drilled ahead to 6000 feet. In a 15-minute drill stem test through half-inch chokes at both top and bottom at 5719 to 5735 feet, this well showed some gas and one joint of drilling mud.

Several Missing Sand

But it is not this test alone that is causing pessimism. Phillips Petroleum Company's M. Justiss 1, Section 18-18-17, was coring ahead at 5770 feet. The best showing it had was two feet of oil sand above 5621 feet and nothing whatever in the way of a sand lense carrying oil or gas appeared from 5735 feet to present depth. Lion Oil Refining Company's Edna Morgan A-2, Section 18-18-17, was coring ahead below 5576 feet, and Edna Morgan B-2 in the same section was reaming down to 5631 feet after logging saturation to 5637 feet. This test in a 15-minute drill stem test, with ½-inch choke open at top and bottom, showed 240 feet of oil and 120 feet of mud from 5555 to 5580 feet; elevation is 243 feet.

South of production, Edwin M. Jones' Murphy Land Company A-1, Section 19-18-17, was coring below 5628 feet; elevation is 216 feet. This test, in a core in black shale at 5525 feet, had an odor of oil, this being the highest any test in that area so far has had such a showing.

Schuler's drilling operations are divided among the following companies: Alice Sidney Oil Company, 2; Edwin M. Jones, 3; Lion Oil Refining Company, 5; Marine Oil Company, 1; Phillips Petroleum Company, 4.

ARKANSAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CLEVELAND COUNTY—		
Texas-Canadian Dev. Co., I. E. Moore 1, 22-9-10	*	3819
LITTLE RIVER COUNTY—		
M. E. Sanderson, Penning 1, 6-13 20	*	1301
MILLER COUNTY—		
E. H. Moore, Inc., Dale 2, 24-15-26	*	7310
Standard of La., Sarah Harvey 1, 33-16-25	*	5775

*Failures; †Junked; ¶Million cu. ft. gas.

Two deep ones abandoned, one in Permian lime

Texarkana, Ark.—Two deep wildcats were abandoned last week in Miller County, Arkansas. E. H. Moore, Inc., abandoned Dale 2, center east half 24-15-26, at total depth of 7310 feet after an electrical tester indicated salt water. The hole was 32 feet in Permian lime; elevation was 250 feet. This test had logged top of the Young horizon of the Glen Rose at 4320 feet and topped Travis Peak at 4654 feet.

Standard Oil Company of Louisiana abandoned its second geophysical prospect in the North Louisiana-Arkansas territory. Sarah Harvey 1, SW SW 33-16-25, Miller County, was dry at 5775 feet in Glen Rose. It checked low throughout, not picking up the Hill, upper Rodessa horizon, until 5328 feet; elevation was 365 feet. It had been designed as a 9000-foot test. Standard recently abandoned another geophysical prospect in Claiborne Parish, Louisiana, near Athens, that checked low throughout. The company is clearing location for McKean 1, Section 8-16-21, Columbia County, Arkansas, near the LaFayette County line. Standard has been a heavy lease buyer in that area in recent months.

Columbia County leading lease play in Arkansas

El Dorado, Ark.—Columbia County, where Standard Oil Company of Louisiana last week made a wildcat location in Section 8-16-22, led the rest of Arkansas in leasing activity last week. Besides its block near the town of Waldo, where it made the new location, the company has been active recently in Township 17, Range 19. In the same township and range, Sun Oil Company and H. L. Hunt have also been active leasers, and Royal Oil & Gas Corporation also has been taking some tracts. Arkansas-Louisiana Gas Company has been leasing around Section 16-17-20. Deep Rock Oil Company is leasing in the same area.

George Stevens has been leasing in Township 18, Ranges 20 and 21, and Devonian Oil Company has also been active in Townships 18 and 19, Range 21, around a block owned by Standard of Louisiana.

J. T. Walker has assigned a 7500-acre block in Township 19, Range 20, to Harry Hanbury and associates for a proposed test to the Permian lime. J. G. Puterbaugh has been leasing in Township 19, Range 18, and Darby Petroleum Company took a few leases around Section 11-15-20.

The most recent entrant into the immediate Schuler area in Union County was Texas Canadian Oil Company which bought east half NW NW 21-18-17, and SW NE 13-18-18, Union County.

El Dorado, Ark.—Four drilling permits were authorized last week by the Arkansas Board of Conservation, 3 being for the Rodessa extension area in Miller County, as follows: Roberts Brothers, Henderson, Texas, W. W. Capps 1, located 330 feet north and west SEc NW SE 10-20-28; W. L. McClanahan, Texarkana, A. A. Capps 2, 330 feet from south line and 330 feet from west line SW SW 11-20-28; A. A.

If this be Proselytism . . .

Out of the mouths of babes come wisdom, sometimes. The student of comparative religions wrote in his examination paper: "The Christians may only have one wife. This is called monotony." But there is nothing in any creed to keep an oil man from having more than one supply company—unless he gets the kind of service we've been dishing out for 30 years.

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Valley—Turnertown—Greggton—Houston

Capps 3, located 330 feet from west line and 660 feet from south line SW SE 11-20-28. The other permit was issued to James H. Coker, Hot Springs, for McClain 1, center NE NW 15-4n-2w, Monroe County.

State starting two tests in Jackson gas field

Jackson, Miss.—Locations were made last week for two more tests to the gas horizon of the Jackson field by State of Mississippi on its 1320 acres of state land in the northern part of the field. The new locations, both of which are in Hinds County, are: Fee 6, SE SE 26-6n-1e, derrick, and Fee 7, SW SE NE 26-6n-1e, location.

F. H. Scott, who recently assembled a 13,000-acre block of leases in Townships 7 and 8 north, Range 7 east, Lincoln County, south Mississippi, is reported planning to assign it to The California Company which kept a geophysical party in that area for some time. Scott is also completing a block in Township 5 north, Range 6 east, of the same county.

The Masonite Corporation of Laurel, Mississippi, has been leasing recently in the western part of Clarke County, east Mississippi.

Jackson, Miss.—The Mississippi State Oil and Gas Board has adopted a rule recently that any test drilled for oil or gas and abandoned for as long as 90 days shall have log of same filed with the state oil and gas supervisor or appear before the board and give a legitimate excuse for failure to file the log in that length of time.

Mobile, Ala.—J. W. Phillips is directing seismograph work in Suwanee County, Florida, after having the unit working for some time in the southern edge of Georgia near the Florida line. Independent Exploration Company for some time had a party doing seismograph work in Ware and Coffee counties, southeast Georgia, but the party, which made Waycross headquarters, is reported to have returned to Houston recently.

Georgia Leasing Active

Atlanta, Ga.—Another state has been added to the group of three Southeastern States (Mississippi, Alabama, and Florida) which are receiving the attention of oil operators. The new member is Georgia. The oil and gas seeps near Scotland, Georgia, in Telfair County, have been teasing oil operators and geologists for years. It now looks as if the show down is near.

It is understood that a seismograph crew of The Adams Louisiana Corporation has worked out three structures, and that tests will be drilled on each structure. The company has had a seismograph crew in South Georgia for almost a year, shooting in Coffee, Wayne, Pierce and Atkinson counties. The crew finished its work about two weeks ago and has been moved back to Texas.

Kenneth Nix of Tate, Georgia, and Fred G. Scott of Tulsa, have leased about 50,000 acres in several southern Georgia counties.

C. L. Sutton, oil operator of Tulsa, has a block of 100,000 acres in Clinch County, where he plans a deep test this fall.

ROCKY MOUNTAIN FIELDS

Gas in water well changes it to test for oil.

* * *

Value of Minnelusa at Lance Creek undetermined.

* * *

Wasatch sand at Powder Wash apparently defined.

Casper, Wyo.—Started as a water well, Mountain Fuel Supply Company's Williams 1-A, C NE NE 5-12n-95w, on the Cherokee Ridge uplift, Sweetwater County, southwestern Wyoming, was changed to an oil test this week as a result of the well's discovery of gas last week. The gas flow was opened around 300 feet and later caught on fire, destroying the rig. New equipment was moved in. Four hundred feet south of the water well location, company has erected derrick for W. L. Williams 1, original location for the test, which will be drilled along with the adjacent well. A slight delay in the Williams 1-A well was experienced this week when tools became lodged around 350 feet.

Sets on Top of Minnelusa

Attention in the Lance Creek field, Niobrara County, eastern Wyoming, this week was attracted to Continental Oil Company's Tom Bell 10, C SW NW 34-36n-65w, deep test well in the southeastern sector. It has encountered the deep Minelusa horizon at an undesignated depth and has set production string of 7-inch pipe on top of the formation. Operators are waiting on

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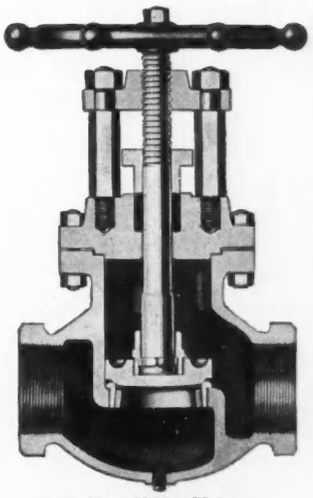

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cement to set before drilling plug to test the sand. Recovery of commercial production in the deep well at this point will determine to a large extent the possibilities of the deep pool in the field.

A. B. Cobb's Novick-Ong 2, southeast corner SW 6-35n-65w, on the western edge of Lance Creek, is still a mystery in so far as the possibilities of the Minelusa sands to which the well was deepened are concerned. A depth of 5300 feet is reported, as were some oil shows from around 5270 feet. Operators are removing material from the location and the well apparently is to be abandoned.

Headed for Deep Sand

Ohio Oil Company's Leo 1 OPC-7, NWc NW SE 5-36n-65w, east side of the Lance Creek, is drilling at 2778 feet, headed for the Minnelusa formation. Another deep test of the company in the east sector of the field is Taylor 2 OPC-32, NWc NW SW 25-36n-65w, making hole at 3982 feet. Company's Leo 2 OPC-7, NEc NE SE 23-56n-97w, is waiting on equipment. It also is to be drilled to the Minnelusa.

Argo Oil Company has shut down Ford 3, SW SW 33-36n-65w, at 4037 feet. Located in the northern side of the field, the well made 5 barrels of oil a day on pump before being shut in. Ford 4, SW SE 33-36n-65w, Lance Creek, is drilling at 3605 feet.

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Testing Upper Sundance

Laramie Basin fields of southern Wyoming showed steady progress during the past week. In the jointly operated Big Medicine Bow field, Carbon County, Ohio Oil Company and California Company's Union Pacific-Cronberg 4, C SW SW 25-21n-79w, is testing after being shot in the Upper Sundance formation at 5446 feet, plugged depth. Union Pacific-Cronberg 5, C NW NW 25-21n-79w, is running 10-inch casing to bottom at 1995 feet, and Wm. Kyle 3-A, SW NE 26-21n-79w, has set 10¾-inch casing at 1412 feet and is drilling at 1537 feet.

In the Simpson Ridge gas field, west of Medicine Bow, Ohio Oil Company's Union Pacific 1, SWc NW NW 20-21n-80w, is drilling at 980 feet.

A deep Tensleep test well in the Rock River field, Carbon County, Ohio Oil Company's Alba Dixon 8, NE SE 34-20n-78w, is drilling in objective sand at 5409 feet, with no oil shows reported. The company's Harrison-Cooper 12, SE SW 35-20n-78w, Rock River, is still a location.

A deep test well of the Muskrat gas field, Fremont County, west central Wyoming, Sinclair-Wyoming Oil Company's Muskrat 2-C, NE SW SW 1-33n-92w, is drilling at 7437 feet, headed for Tensleep formation. Saturation encountered in the Embar at 7268-7313 feet showed non-commercial possibilities on test.

In the Wertz field, Carbon County, Sinclair-Wyoming is drilling at 3306 feet in shale formations in Wertz 11-A, SE NW NW 7-26n-89w. Well is headed for the Tensleep production level of the field where one well has found commercial oil.

Wasatch Sand Dry

A depth of 5642 feet in the lower Wasatch series has been reached by Mountain Fuel Supply Company's J. C. Donnell 1, NE SE 21-12n-97w, Powder Wash field, Moffat County, northwestern Colorado. The well is on the extreme northern limit of the field and has reported no commercial oil or gas shows, apparently marking the northern limit of the Wasatch pools of the field. The company's Charles Stone 1, SW¼ SW 18-19n-103w, in the North Baxter Basin field, Sweetwater County, southwestern Wyoming, failed to show satisfactory results on test last week and is drilling at 3677 feet in the Sundance formation. Casing has been cemented on top of the formation at 3535 feet.

Utah Project Testing

Mountain Fuel Supply Company's E. S. Lauzer 1, NW NW 27-3n-24e, in the Clay Basin gas field, Daggett County, northeastern Utah, is testing. It showed 14,000,000 cubic feet of gas daily on test from Dakota formation at 5740-5814 feet.

Activity in northern Wyoming this week swung ahead rapidly, although some difficulty was encountered in transportation as a result of rains. Roads into the northern part of the state were in several places rendered impassable by washouts, which prevented moving in material for starting work on any of the new locations announced last week.

In the Garland field, Big Horn Coun-

ty, the Yale Petroleum Corporation's Stock Jones 1, SEc Lot 52-56n-97w, logged the top of its objective, the Madison lime, at 3833 feet this week and is drilling at 3918 feet with no shows reported.

Ohio Oil Company's two active wells in the Byron field, Big Horn County, are nearing critical depths. Adam Pryde 1, C SW SE 24-56n-97w, is drilling at 4391 feet. Baker-Byron 2, SW NW 23-56n-97w, is drilling at 3660 feet. No work was started this week on the two new wells for which location was released last week.

Osage May Start Again

With the abandonment of two more wells in the shallow Osage field, Weston County, eastern Wyoming, this week, there are no active drilling wells in the field. Several holes have been temporarily suspended, howver, and with an incrase in demand for crude from the field seen for July, it is probable that some of these wells will be resumed. Wells completed this week in the field were H. D. Wiltse's 13, SE NE NW 17-46n-63w, which was dry to 430 feet. Bert Higgins 5, C NL NW SW 4-46n-63w, Osage, was abandoned at 300 feet.

Place Oil Company's Government 1 was preparing to test oil shows this week after cementing 8⅝-inch casing at 1130 feet as a production string. The well encountered oil shows in the hole two weeks ago at 1140-51 feet.

MOUNTAIN STATES Completions

MONTANA

Company, Well and Location	Init. Prod. Bbls.	Depth
FERGUS COUNTY (Winifred Area)—		
Emmons et al, Mauland 4, sw sw sw 3-21n-18e	*	432
Pennock 3, se ne ne 6-21n-18e	*	1081
Judith Operating Co., Scharf 2, cwl nw ne 35-22n-17e	*	3200
GLACIER COUNTY (Cut Bank Field)—		
Glacier Production Co., State 2-16, sw sw sw 16-33n-5w	450	2957
Montana Headlight Oil Co., Britton 5, se sw ne 14-34n-6w	*	2924
K. D. Pardee, Corrigeaux 1, ne ne se 35-34n-6w	75	2985
Texas Co., Hardwick 2, ne se 17-32n-5w	100	2986
Unit 9-4, ne nw 9-32n-5w	120	3092
A. E. Wilkinson, Allotted 3-127, cse se 1-32n-5w	*	3024
TOOLE COUNTY (Kevin-Sunburst Field)—		
Atland, Ward 1, cnw se 29-25n-3w	15	1755
A. E. Crumley, Shaw 2, cne nw 35-36n-2w	12	1617
A. H. Blase, Burwash 5, s ne sw 15-34n-1w	3	1005
Leo Sweeney, Davis 5, nw ne sw 27-35n-3w	75	1128
E. C. Carney, Stockman's National Bank 2, cnw ne 11-35n-2w	15	1634
Nepstead et al, Haugen 2, cnw ne 11-35n-3w	12	1825
Prevol & Shay, Porter 1, s nw nw 12-34n-3w	21	1540

WYOMING

BIG HORN COUNTY (Garland Field)—		
Ohio Oil, Vernon Smith 1, nec 33-56n-97w	374	4094
WESTON COUNTY (Osage Field)—		
Osage Trust Co., 1, nw nw nw 22-46n-63w	*	220
ALBANY COUNTY (Quealy Dome Field)—		
California Co., Holst 7, ne ne se 13-17n-77w	528	3797
NIOBRARA COUNTY (Lance Creek Field)—		
Continental, Schuricht 4-B, nwc sw se 6-35n-65w	601	3979

*Failures; †Junked; ¶Million cu. ft. gas.

EASTERN FIELDS

26 tests drilling in New York-Pennsylvania field.

* * *

Ohio's Kentucky completion is largest of week.

Pittsburgh.—Eastern fields completions totaled 82 for the past week, a gain of 5 over the previous 7-day period, as operations in all sections of the 7-state area continued to increase.

The largest producer of the week was completed by Ohio Oil Company as G. B. McManama 6, Cleopatra district, McLean County, Kentucky. It is good for 125 barrels daily. Snowden & McSweeney completed the only other test in this district, a failure on the J. P. Daniels tract, bottomed at 1548 feet.

J. C. Ellis has a 60-barrel well from a stray sand in J. T. Hoagland 16, Westerfield district, Ohio County. Leper Oil Company's C. L. McKinley 7 produced 25 barrels the first 24 hours from Jett sand, bottomed at 740 feet. Other operations completed in this county were: Jess Ellis' C. D. Westerfield 10, good for 10 barrels a day and bottomed at 612 feet; Vickers & White's Hulett Heirs 2, gauging 350,000 cubic feet of gas and bottomed at 1075 feet; and failures by Henry Scholl on the J. C. Nabors tract and by W. W. Damron on the Allen King tract, bottomed at 402 and 788 feet, respectively.

19 Completions in Kentucky

Kentucky and West Virginia Gas Company completed two gas wells in Knott County. The first, on the Charles and Francis Sturgill's farm, gauged 1,060,000 cubic feet after a shot and is bottomed at 2133 feet. The second is on T. J. Hagens tract and gauged 270,000 cubic feet. Total depth is 2380 feet.

Kentucky completions totaled 19, of which 9 were producers averaging 35 barrels, 3 were gas wells, and 7 were failures.

The largest Ohio producer was completed by H. W. Scott et al. William Myers 4, NE¼ Section 5, Licking Township, Muskingum County, produced 100 barrels the first 24 hours after a shot. It is bottomed in the Clinton sand at 3231 feet. Everett H. Everett Company et al have a fair producer in this township in M. F. Doyle 2, showing for 40 barrels a day from the Clinton sand at 3198 feet. The third completion in this county was a failure, the Joseph Varner 8, drilled by Hope Construction & Refining Company, bottomed at 3237 feet.

One completion was recorded in the New York-Pennsylvania deep sand gas field: The New York State Natural Gas Company's test on the L. J. Rob-

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erts farm, Clymer Township, Tioga County, on the Pennsylvania side, gauged 3,000,000 cubic feet with initial rock pressure of 1300 pounds. Top of the gas was 4577 feet, and the well is bottomed at 4586 feet.

Seven Locations

Seven new locations were announced, 3 in Pennsylvania and 4 in New York. The New York State Natural Gas Company will drill on the A. W. Leonard farm, Westfield Township, Tioga County; Potter Development Company will deepen a test abandoned at 4081 feet on the C. Learn tract, Farmington Township, Tioga County, and Evjen et al are building rig for a test on the Dusenberry tract, Watson Township, Warren County, all in Pennsylvania. New York locations are by G. L. Cabot, Inc., on the Thomas Murphy farm, Alma Township, Allegany County; two by Sylvania Corporation, on the H. Hand farm and on the E. G. Husted tract, both Woodhull Township, Steuben County, and by Farrimen et al on the C. Wilson farm, Willing Township, Allegany County.

Twenty-six tests are drilling in this field, 8 in Potter County, 2 each in Warren and Crawford counties, and 1 each in McKean and Tioga counties, on the Pennsylvania side, and 9 in Steuben County, and 1 each in Cattaraugus, Schuyler and Allegany counties, on the New York side.

Eastern States' largest gas well of the week was completed by United Carbon Company on the H. C. Smith farm, Elk district, the Oriskany field of Kanawha County, West Virginia. The second test on this tract, it gauges 4,550,000 cubic feet and is bottomed at 5075 feet. Godfrey L. Cabot, Inc., completed the second test in this field, Nellie B. Tompkins 5, Malden district, which gauged 360,000 cubic feet when bottomed at 4666 feet.

There were no failures among the remaining 11 West Virginia completions. Ten were gas wells and 1 a 5-barrel producer by Gale Oil Company on the George Smith tract, Tyler County, bottomed at 1350 feet.

Southwest Pennsylvania completions totaled 6, 4 small producers and 2 gas wells. The largest was I. C. Bloom et al's test on the Clyde Hinerman tract, South Franklin Township, Washington County, which is showing for 15 barrels a day after being deepened from 900 to 1350 feet. A second deepening operation in this county was completed by New Oil & Gas Company, to 3170 feet, on the Sarah Dodd tract. It is showing for 5 barrels a day. Carnegie Natural Gas Company has a gas well gauging 420,000 cubic feet on the S. W. Bails farm, bottomed at 2930 feet. In Allegany County, small producers were completed by Charles B. Wachter on the Mrs. Emma Skees farm and by W. H. Say et al on the Mrs. D. Rosensteel tract. Equitable Gas Company completed William Hoge 560, Jefferson Township, Greene County, at 3097 feet. It gauged 60,000 cubic feet a day from the Fifth sand.

Twelve Indiana completions netted 5 small producers, 1 gas well and 6 failures.

EASTERN FIELDS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
WEST VIRGINIA		
BOONE COUNTY—		
Owens Illinois Glass Co., Allen & Pryor 22	¶.35	2025
Cassingham Coal Land Co. 27	¶.25	2390
E. C. Stollings 1	¶.24	1785
BRAXTON COUNTY—		
Pittsburgh & West Virginia Gas Co., S. B. Cook 7612	¶.08	1300
CALHOUN COUNTY—		
Henderson Oil Co., Allen Wilmouth 1	¶.43	2900
Ivy Gainer et al, A. H. Stump 1	¶.04	1680
GILMER COUNTY—		
Paul Weekly et al, Pearle Woodyard 1	¶.26	....
KANAWHA COUNTY—		
United Carbon Co., H. C. Smith 2	¶4.55	5075
Godfrey L. Cabot, Inc., Nellie B. Tompkins 5	¶.36	4666
LINCOLN COUNTY—		
Black & Pridemore, W. H. Meadows 1	¶.46	4325
Huntington Development Co., Huntington Development Co. 291	¶.31	3522
TYLER COUNTY—		
Gale Oil Co., George Smith 4	5	1350
WAYNE COUNTY—		
Southeastern Gas Co., Frank Marcum 1	¶.2	2690
PENNSYLVANIA		
ALLEGHENY COUNTY—		
Charles B. Wachter, Mrs. Emma Skees 1	1	....
W. H. Say et al, Mrs. D. Rosensteel 1	2	....
GREENE COUNTY—		
Equitable Gas Co., William Hoge 560	¶.06	3097
TIOGA COUNTY—		
Potter Development Co., L. J. Roberts 1	¶3	4587
WASHINGTON COUNTY—		
I. C. Bloom et al, Clyde Hinerman 2	15	1350
New Oil & Gas Co., Sarah Dodd 1	5	3170
Carnegie Natural Gas Co., S. W. Bails 1	¶.42	2930
KENTUCKY		
DAVIESS COUNTY—		
Hoosier Drilling Co., Jim Yeiser 1	*	1600
ESTILL COUNTY—		
South Penn Oil Co., J. M. Garrett 49	5	812
Petroleum Exploration Co., James Griffin 9	5	190
HANCOCK COUNTY—		
Chester Oil Co., J. W. Baughn 6	50	359
Eureka Drilling Co., Fred Richards 2	*	....
Frank Damron, Ollie Lyons 3	*	608
Fred Bowling 2	*	562
KNOTT COUNTY—		
Kentucky & West Virginia Gas Co., C. & F. Sturgill 550	¶1.06	2133
T. J. Hagens 549	¶.27	2380
LEE COUNTY—		
Garrison & McCan, Andrew Combs 2	25	....
Central States Oil Co., Marion Shoemaker 1	10	....
McLEAN COUNTY—		
Ohio Oil Co., G. B. McManama 6	125	....
Snowden & McSweeney, J. P. Daniels 1	*	1548
OHIO COUNTY—		
J. C. Ellis, J. T. Hoagland 16	60	....
Leper Oil Co., C. L. McKinley 7	25	740
Jess Ellis, C. D. Westerfield 10	10	612
Vickers & White, Hulett Heirs 2	¶.35	1075
Henry Scholl, J. C. Nabors 4	*	402
W. W. Damron, Allen King 1	*	788
INDIANA		
DAVIESS COUNTY—		
Midwest Development Corp., Chas. E. Norris Heirs 1	*	....
DECATUR COUNTY—		
Hoosier Public Utility Co., Constant V. Abeele 2	¶.2	900
GIBSON COUNTY—		
Midwest Development Corp., Geo. & Cora Conrad	*	1332
PERRY COUNTY—		
Charles E. Dice, Charles Krutz 6	*	550
PIKE COUNTY—		
A. E. Davis, Thos. O. Wood 1	*	700
Mascot Oil Co., Martha Ingler 6	8	1025
Murphy Oil Co., Roscoe Cox 1	20	995
SPENCER COUNTY—		
Staves Drilling Co., John Bretz Heirs 1	3	....
A. J. Tyler, G. Frazier 1	*	641
John L. Drake, W. W. Spain 1	*	627
SULLIVAN COUNTY—		
Niagara Oil Corp., Clarence Blount 1	4	682
VANDERBURG COUNTY—		
K. R. Bixby et al, Jos. B. Glaser 2	20	1248
OHIO		
ATHENS COUNTY—		
Chartiers Oil Co., E. Stratton 5	8	3537
GUERNSEY COUNTY—		
Hayes Ferguson et al, Luther Kinnison 1	¶.08	1134
Roy Hammond et al, John Martin 2	*	1288
HOCKING COUNTY—		
J. G. Dawson, Carbon Coal Co. 6	35	3395
Griffith Producing Co., Jennie Parks 3	¶.38	2965
LICKING COUNTY—		
Wehrle Gas Co., Wm. Wright 1	¶.2	2435
Frank Woolard 1	¶.03	1340
LORAIN COUNTY—		
William Dempsey, Julia Clark 3	¶.59	2274

*Failures; †Junked; ¶Million cu. ft. gas.

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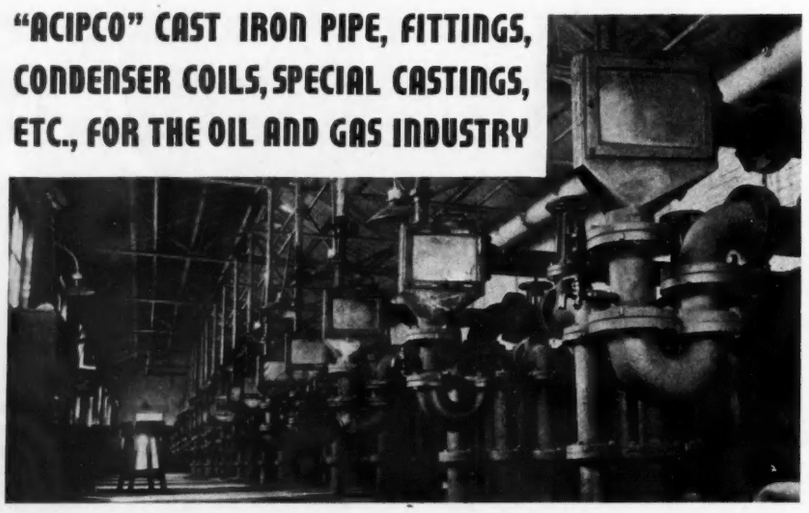

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Company, Well, and Location	Init. Prod Bbls.	Depth
MEDINA COUNTY—		
Harry Latshaw, Arthur Aylard 3...	2	517
Harold L. Pearsall C. W. Besoin 2	¼	371
John March, Ira Stratton 1	*	512
MEIGS COUNTY—		
Ohio Fuel Gas Co., Ernest Harrison 1	¶.19	833
A. T. Barton, Isaac Taylor 1	¶.07	665
MONROE COUNTY—		
L. Burns & Co., Grace Anderson 1	2	1300
Blue Ridge Oil & Gas Co., Rex Kindall	*	2042
MUSKINGUM COUNTY—		
H. W. Scott et al, William Myers 4	100	3231
Everett H. Everett Co., et al, M. F. Doyle 2	40	3198
Hope Construction & Refining Co., Joseph Varner 8	*	3237
PERRY COUNTY—		
Wiser Oil Co., W. B. Kullman 1..	8	2990
Wehrle Bros., Worley Deaver 9...	*	1233
STARK COUNTY—		
East Ohio Gas Co., Arthur Daily 1	¶1.7	4310
Ohio Fuel Gas Co., Alice Fashbaugh 1	¶.41	4250
TUSCARAWAS COUNTY—		
James Upham, C. G. Leggett 1.....	*	5077
VINTON COUNTY—		
Kelch Bros., E. O. Hutt.....	¶.04	724
WASHINGTON COUNTY—		
Russell et al, Joseph J. Lawrence 27	*	670
H. H. Uhl et al, W. V. Torner 1..	*	650
C. D. Burt et al, John Pugh 2....	*	467

ILLINOIS

CLAY COUNTY—		
Pure Oil Co., Sarah Bechtel 1, ne se nw 33-3n-8e, Clay City Twp, elev 436 ft 1857		2967
CLINTON COUNTY—		
Patoka Petroleum Corp., Ducomb 1, se nw 13-3n-1w, Clear Fork Twp, elev 493	*	1504
Santa Fe Oil & Gas Co., H. Robben 1, se sw se 5-1n-3w, Santa Fe Twp	118	989
P. Kleinekorte 3, sw ne 8-1n-3w, Santa Fe Twp	*	1059
CRAWFORD COUNTY—		
Fred Burns, C. L. Ducommon 1, sw se 12-5n-13w, Martin Twp, elev 454 ft	*	1035
Dinsmoor Oil Co., W. E. Ewing 31-B, c ne nw 31-6n-11w, Honey Creek Twp, elev 510 ft	12	943
Salvage Oil & Gas Co., W. S. McGrillis 4, sw nw sw 25-8n-13w, Prairie Twp, elev 550 ft.....	4	1001
W. S. McGrillis 3, se nw sw 25-8n-13w, Prairie Twp, elev 556 ft..	3	1415
FAYETTE COUNTY—		
O. A. Davis et al, Pat Ford 1, sw ne sw 31-5n-3e, Lone Grove Twp	*	172
LAWRENCE COUNTY—		
Warren Hastings et al, Charles Weger 1, c n½ nw 29-5n-10w, Russel Twp, elev 483 ft.....	*	719
McDONOUGH COUNTY—		
Spence et al, Jos. Hoing 6, nw nw sw 16-4n-4w, Lamoine Twp, elev 512 ft	5	435
MARION COUNTY—		
Wiser Oil Co., Seth Martin 1, nw se nw 27-4n-1e, Patoka Twp, elev 503 ft	*	1679
Adams Louisiana Oil Co., Glenn Merryman 6, 220 ft e of c of wl se sw 21-4n-1e, Patoka Twp, elev 496 ft	150	1430
Merryman 7, 220 ft s of c of nl nw nw 28-4n-1e, Patoka Twp, elev 492 ft	300	1420
Sam Pugh 1, nw nw se 29-4n-1e, Patoka Twp, elev 485 ft	29	1612
Illinois National Oil & Gas Co., City Lot 1, ne sw 28-4n-1e, Patoka Twp, elev 496 ft	300	1425
J. Hausman et al (Geo. Timberlake), Jeff Smith 1, nw se 28-4n-1e, Patoka Twp, elev 505 ft	150	1449
H. Fredrick et al, Alton Lot 1, ne sw 28-4n-1e, Patoka Twp, elev 505 ft	174	1441
Cypress Oil & Gas Co., C. Adams Lot 1, ne sw sw 28-4n-1e, Patoka Twp, elev 507 ft.....	200	1454
WABASH COUNTY—		
Adams Corners Oil Co., Mark Madden 18, nw nw 7-1n-11w, Wabash Twp, elev 460 ft.....	20	1420
Patton Oil Co. (Mac Couch et al), J. K. Stillwell 1, nw sw 27-1n-12w, Wabash Twp, elev 400 ft.....	20	1480
WAYNE COUNTY—		
Pure Oil Co., E. C. Brach 1, nw nw sw 26-1n-7e, Bedford Twp, elev 429 ft	20	3119

*Failures; †Junked; ¶Million cu. ft. gas.

MICHIGAN FIELDS

Completions and new starts show first decline of year

Mount Pleasant.—Michigan completions and new starts sluffed off the current week for the first break in the record activity of 1937. Only 13 completions were recorded, including 11 oil wells, a gas well and a wildcat failure. Ten new permits were written by the state.

A fourth new pipe line system was reported probable for the Buckeye field, which has 150 Dundee lime producers, with the Nap-Sol-Anderson and Rex Oil Company interests planning a 15-mile, 6-inch line into Coleman where shipments to markets would be made by rail. O. H. White, proration umpire, said pipe line officials anticipate improved marketing conditions by late July, with expectations of boosting the Buckeye take to about 20,000 barrels daily.

Will Abandon Outpost

Durham and Jones' Gingerage 1, NW NW SE, 15-17n-1e, 2½ miles southeast of South Buckeye pool, failed to show commercially in Dundee lime and will be abandoned.

Gaylord Norton's Egholtz 1, Section 28-12n-9w, Montcalm County, flowed and bailed oil and water from 3346 feet (Dundee 3238 feet) and was still testing this week. Operators hoped to exhaust water or get a shut-off for commercial production on the test. It is about one mile southeast of a small pumper completed in the same formation several months ago.

Unitized Gas Development

A unitized gas development program has been launched in Arenac County, where development this year showed commercial gas in the shallow Berea sand horizon. Actual gauges from 5 to 12 million feet showed on several tests.

Consumers Power Company will, it was reported, build a pipe line into Bay City, if gas testing establishes an adequate reserve. Operators have pooled several hundred acres for the gas development, reserving oil rights. Drilling is being started on a spacing pattern of 1 test to 160 acres.

MICHIGAN
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ALLEGAN COUNTY—		
Allegan Crude Oil Co.'s Holthof 1, sw nw se 17-4n-13w.....1000		1596
Muskegon Oil Co.'s Moomey 3, ne ne se 17-4n-13w	800	1610
ARENAC COUNTY—		
Gulf Ref. Co.'s Kainder 2, nw sw nw 10-20n-4e	60	2574
GLADWIN COUNTY—		
Mammoth Pro. & Ref.'s Jakab 3, nw ne se 10-18n-1w	900	3630
M. Bauman's Nash 1, ne sw se 35-18n-1w	700	3580
Schelling & Schrot's Nash 1, se nw se 35-18n-1w	160	3584
McMahon 1, sw se se 36-18n-1w	100	3597
Clark & Johnson's McMahon 6, sw ne sw 36-18n-1w	700	3588
Durham & Jone's Gingerage 1, nw nw se 15-17n-1e	*	3700
ISABELLA COUNTY—		
Rowmor Corp.'s Leiter 3, nw ne sw 33-15n-6w	250	3637
Pure Oil Co.'s McClintic 1, ne se sw 33-15n-6w	200	3646
Garfield Pet. Co.'s McKinnon 1, nw nw ne 5-16n-4w	*	3901
MIDLAND COUNTY—		
Pure Oil Co.'s Bond C9, n½ sw se 12-13n-2w	200	3438
MUSKEGON COUNTY—		
West Michigan Co.'s Bennett 1, c ne 5-9n-14w	¶½	1263

*Failures; †Junked; ¶Million cu. ft. gas.

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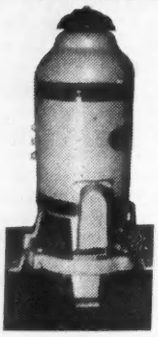

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CALIFORNIA FIELDS

Activity largely exploratory tests and new wells.

* * *

Sunset takes over dry hole mile south of El Segundo.

* * *

Quartermaster makes wildcat location in desert.

Los Angeles.—Deepening and redrilling jobs are falling off in California, with the bulk of current activity being devoted to new wells in fields, wildcats, and deep tests for new sands in proven areas.

Thus far this year 374 deepening or redrilling projects have been started as against 454 for the corresponding period of last year. On the other hand, permits for new wells granted total nearly 300 more than they did this time in 1936.

In connection with the search for deeper oil, one of the most interesting wells in California is Republic Petroleum Company's El Segundo 8, which was deepened from 7406 to 7580 feet, penetrating the Schist 174 feet. At the former depth, the hole had been producing 50 barrels a day. After being drilled deeper, formation tester was run and 67 stands filled in an hour. Five of the stands contained mud and the remaining 62 stands were filled with clean oil. The hole was then cleaned out, wall scraper was run and some oil followed the swab. After almost two days of swabbing, the well still refused to flow.

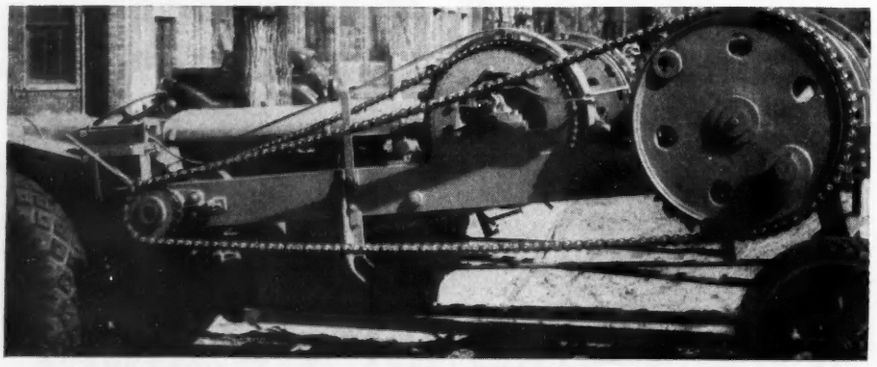
The fact that oil was recovered from the Schist was unusual. One opinion is that the Schist is faulted with younger formations overlapping against the older formation. This version is that the younger beds are the source of the oil, and due to the overlap the Schist could carry oil. This condition probably would only exist in the vicinity of the faulted area and where the Schist is faulted and broken.

In the same field, Ohio Oil Company's Gough 5, depth 7357 feet, with 6⅝-inch cemented at 7265 feet, has been completed for 1536 barrels of 28.3 gravity clean oil. Gas production is only 300,000 cubic feet. Top of the Nodular was picked up at 7100 feet. The Texas Company's Johnson 2-2, Section 17-3-14, with bottom at 7750 feet, will be abandoned. Standard Oil Company's Refinery 1, edge well to the northwest, is preparing to test. Bottom is at 7171 feet, and top of the Schist was cored at 7080 feet. The 25 feet of formation above the Schist will be tested.

Takes Over Old Wildcat

Some years ago, Julian Petroleum Corporation drilled Pacific Land 1 to 5741 feet, and quit. This old wildcat is about one mile south of the nearest production at El Segundo, and Sunset Oil Company has taken over the hole and will deepen it to the Schist, as it is thought the hole is in fair condition.

Union Oil Company continues to search for deeper oil sands, in proven areas and wildcat territory. Its Kernco 1-34, Section 34-28-25, in the Rio Bravo area of Kern County, is now drilling below 10,100 feet in brown shale. Last



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casing was 13⅜-inch, cemented at 1143 feet. Union drilled Callender 50 at Dominguez to 10,435 feet, where drill pipe was stuck. The hole has been plugged back 9605 feet and is swabbing. The company's Bell 100 at Santa Fe Springs, with bottom at 10,789 feet, also stuck the drill pipe. After a long fishing job, the stuck pipe has been cemented and will be sidetracked.

Continental Oil Company is also trying its hand on deep California wells, and its B-1, in the Rosedale area of Kern County, was drilling at 9939 feet in very hard shale. This hole cemented 9⅝-inch at 5045 feet. Progress is very slow, due to extremely hard formation, requiring a lot of time in coming out and going back into the hole.

Seaboard Oil and Tide Water Associated's joint test in Wasco area of Kern County, known as Continental-K.C.L. C-1, stopped drilling at 10,213 feet in hard brown shale. Work has been suspended for the present, pending final decision as to going deeper.

Watch Second Newhall Test

The new field discovered by Barnsdall Oil Company in the Newhall area is still being watched rather closely. Since Barnsdall tied up so much acreage, others must try edge acreage if they want to drill. Ricano Oil Company has secured leases on about 50 acres in the general area, approximately one mile from the Barnsdall discovery well. Location for its first test has not yet been announced.

Barnsdall's Rancho San Francisco 1, discovery well, is producing 150 barrels a day. No. 2 is drilling at 3185 feet. The second Barnsdall test is expected to go to what has been termed the second zone. Some figure the second zone will have close to 500 feet of oil sand. The second zone outcrops in the canyon nearby.

In this same general area, Holbrook Petroleum Company's Newhall Land 1, Section 28-4-16, is bottomed at 5841 feet, and 6⅝-inch has been cemented at 5740 feet. This well is known as the "policeman's well," since it is being financed by the Los Angeles police department.

A good part of San Bernardino County in California is made up of desert, but every year or so some oil company decides that maybe there is oil in that vast waste. The latest is Quartermaster Oil Production Company, which has made a location in Victor Valley, in Section 21-5-6.

Another rather interesting Los Angeles Basin wildcat is West American Oil Company's Irvine Ranch 1, Section 14-5-9, in Orange County, drilling in hard sand with streaks of shale at 5685 feet.

In the old Rosecrans area in Los Angeles County, there is renewed interest in the deep sand which was developed several years ago, but where producers had a short life. Six wells are drilling for production from the deep zone. Union Oil Company has the deepest hole, with bottom at 7560 feet, and 7⅝-inch has been cemented at 7245 feet. This deep zone produces high gravity oil.

CALIFORNIA
Completions

Company. Well and Location	Init. Prod. Bbls.	Depth
BELRIDGE—		
Belridge Oil Co. No. 35-3	2800	8400
DEVIL'S DEN—		
Amerada Pet. Corp. Beer 4	25	2670
EDISON—		
Monterey Explor. Co. Duff-Shell 6	150	3605
KERN FRONT—		
Apex Pet. Corp. No. 10-3	175	2247
KETTLEMAN HILLS—		
Kettleman North Dome, No. 32-34J	1640	7700
McKITTRICK—		
East Puente Oil Co. Home Lease 23	30	1313
MIDWAY SUNSET—		
Olis Hoyt, Maricopa 6	200	1840
MOUNT POSO—		
Ring Oil Co. Shapiro 1	400	1738
Shell, Security 20	300	1794
ADAM—		
Hancock & Bush, Brown 2	230	3824
Union Oil Co., Mahoney 3	200	3800
OXNARD—		
El Rio Oils, El Rio 1	90	3024
FRUITVALE—		
Mesa Pet. Co., La Barte 1	*	3392
KERN COUNTY—		
Ohio Oil Co., K.C.L. E-2	*	8790
SAN LUIS OBISPO COUNTY—		
R. A. Foster, McKee 1	*	5087
INGLEWOOD—		
Standard, K & I Rubel 25	2775	3938
EAST COYOTE—		
Bartholomae Oil Corp. Stern 4	100	5050
WILMINGTON—		
Royalty Service Corp. 16-5-1	250	3622
Union Pacific, Offset 29	2715	3150
Union Pacific, Offset 25	315	3469
Union Pacific, Offset 23	2000	3450
Graham-Loftus, Pioneer 1	125	3441
A.C.P. Oil Co. No. 1	300	3375
Bankline Oil Co. Pac. Term. 19	610	3360
Black Gold Oil Corp. No. 3	300	3669
Burmoel Pet. Co. Ellott 1	250	3595
D. D. Dunlap, No. W-2	600	3615
General Pet. Corp. Ford 3	530	5651
General Pet. Corp. Ford 9	250	3608
Premier Pet. Corp. Seleg No. 5	600	3636
MONTEBELLO—		
Texas Co. Baldwin 16	370	6010

*Failures; †Junked; ¶Million cu. ft. gas.

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IMPORTANT WILDCAT TESTS

ALABAMA

CHOCTAW COUNTY—Joe Modisett et al's McCorvey 1, sw sw 20-9n-2w, arr deepen 200 ft.

GREENE COUNTY—Greene County Oil Dev. Co.'s R. C. Lett 2, se nw 6-21n-2e, sd 115 ft.

HOUSTON COUNTY—Rice O&G Co.'s Oakley Est. 2, se nw sw 9-3n-29e, sd 4975 ft.

MOBILE COUNTY—Grand Bayou O&G Co.'s J. A. Stafford 1, sw sw 24-7s-3w, lcn.

ARKANSAS

ASHLEY COUNTY — Phillips Pet. Co.'s Stillions Lbr. Co. 1, s½ sw nw 18-17-9, 13⅜ in csg 1153 ft, dr 1250 ft.

CLARK COUNTY—M. M. Martin et al's C. L. Cabe 1, nw nw 14-10-20, sd 1695 ft shale.

CLEVELAND COUNTY—Texas Canadian Dev. Co.'s I. E. Moore Est. 1, ne ne 22-9-10, arr abn, td 3819 ft.

COLUMBIA COUNTY—Robt. Keen's Runyon 1, 1-16-21, spd woc 13⅜ in csg 90 ft. Standard of La.'s McLean 1, 8-16-22, mim.

CRITTENDEN COUNTY — Stanley Oil Corp.'s Nanner Hrs. 1, nw se 18-8-9, dr 330 ft.

HEMPSTEAD COUNTY—Easton, May & Murdock's La Grone 1, ne ne 5-12-26, woc 131 ft. Davidson & Todd's Smith 1, sw se 1-11-25, sd 1940 ft shale.

HOWARD COUNTY—Boettcher O&G Co.'s Griffin-Tyson 1, nw nw 28-11-27, top anhydrite 1325 ft, dr 2175 ft conglomerate.

LINCOLN COUNTY—Fitzwater et al's V. Bowens 1, nw sw ne 26-9-6, 10-in csg 20 ft.

LITTLE RIVER COUNTY—M. E. Sanderson's Penning 1, 6-13-20, dry abn, td 1301 ft.

LONOKE COUNTY—Frank Silver's Chambers Est. 2, 17-2-7, cored sand so 1495-1500 ft, arr run electrical tester, td 1500 ft. Al Demurs' High 1, 25-1-9, lcn. Jas. E. Russell's Gunter 1, 17-5-10, dk.

MADISON COUNTY—J. E. & Jno. Handy's Hamlin 1, sw nw se 8-16n-26w, mim.

MONROE COUNTY—J. H. Coker's McClane 1, c ne nw 15-4n-2w, rur.

MILLER COUNTY—W. L. McClanahan et al's Capps 1, ne sw 11-20-28, elev 284 ft, completed second time 407 bbls daily, td 6016 ft. Holcomb & Thomasson et al's Embree Hrs 1, 11-20-28, (formerly Haynes Bros. et al's test), ow, arr pb and test Gloyd, td 6514 ft. W. L. McClanahan et al's Capps 2, swc 11-20-28, rur; Capps 3, 11-20-28, rur. F. W. Burford's Capps 1, C east 40-ac 14-20-28, dr 2195 ft. J. O. Gerald B-1, nec 15-20-28, woc 2110 ft. J. E. Eason 1, w½ se 11-20-28, dr 1885 ft. W. M. Layton's Terry 1, nwc 14-20-28, dr 2175 ft. H. L. Hunt's Womack 1, 10-20-28, dk. Robert Bros.' Capps 1, 10-20-28, rur. E. H. Moore, Inc.'s Dale 2, 24-15-26, elev 250 ft, top Young 4320 ft, top Travis Peak 4654 ft, 8⅝ in csg 5655 ft, top Big Lime 7278 ft, sw abnd, td 7310 ft. Standard of La.'s Sarah Harvey 1, sw sw 33-16-25, dry abn, td 5775 ft, top Hill 5328 ft, elev 365 ft.

NEVADA COUNTY—Benedum & Trees Oil Co.'s Groves 1, se nw 10-14-20, pb to 2186 ft, wosr, old td 6147 ft; Wm. Mitchell 1, 4-14-20, rur. Stewart et al's Walters 1, nw ne 1-14-20, ran electrical tester 2990 ft. Bruce Wallace's Wm. Haynie 3, se nw 6-14-20, woc 1166 ft.

MONROE COUNTY—J. H. Coker's McClane 1, c ne nw 15-4n-2w, rur.

ST. FRANCIS COUNTY—Manning & Martin's Gregg 1, ne sw nw 20-5n-5e, spd dr 1540 ft.

UNION COUNTY—Ark. Southern Oil Co.'s Simmons 1, 15-18-13, Nacatosh sand 2276-80 ft, so, 7-in csg 2246 ft, woc, td 2281 ft. Alice Sidney Oil Co.'s Powledge 1, sw se 7-18-17, coring 5875 ft. Edwin M. Jones' Murphy Lbr. Co. A-1, elev 216 ft, 19-18-17, so in black shale 5525 ft, coring 5625 ft. Lion's Edna Morgan A-2, 18-18-17, coring 5575 ft; Edna Morgan B-2, 18-18-17, elev 243 ft, 240 ft oil ds test 5555-80 ft, arr test so 5631-37 ft. Phillips Pet. Co.'s M. Justiss 1, 18-18-17, coring 5768 ft. W. D. Wingfield's Southern Kraft 1, sw ne 18-16-14, elev 124 ft, sd repr rig 3526 ft. I. J. Langley's K. K. Langley 1, nw se ne 1-19-18, mim.

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildcat reports in THE OIL WEEKLY.

*—*dry hole abandoned well.*	owdd—*old well drilling deeper*
‡—*salt water (completions).*	owpb—*old well plugging back.*
†—*junked and abandoned.*	pb—*plugged back or plugging back.*
¶—*million feet of gas.*	r—*reaming.*
abd—*abandoned.*	rog—*rig on the ground.*
bbls—*barrels.*	rur—*rigging up rotary tools.*
br—*building rig.*	rust—*rigging up standard tools.*
b.s.—*basic sediment.*	sd—*shut down.*
csg—*casing.*	sdtr—*sidetracking.*
co—*cleaning out.*	sg—*show gas.*
dd—*drilling deeper.*	si—*shut in.*
dk—*derrick.*	so—*show oil.*
dr—*drilling.*	so&g—*show oil and gas.*
fsg—*fishing.*	spd—*spudding.*
ft—*feet.*	sr—*straight reaming.*
hfw—*hole full of water.*	sw—*salt water.*
in—*inches.*	td—*total depth.*
lcn—*location.*	ur—*underreaming.*
m—*milling.*	wih—*water in the hole.*
mim—*moving in materials.*	wo—*workover.*
mit—*moving in tools.*	wocs—*waiting on cement to set.*
mot—*milling on tools.*	wosr—*waiting on standard rig.*
n, s, e, w—*north, south, east, west.*	
oih—*oil in hole.*	

CALIFORNIA

FRESNO COUNTY

CANTUA CREEK—Western Gulf Oil Co.'s Skelly Estate 1, 32-16-15, dr shale 2005 ft.

KERN COUNTY

CARRISO PLAINS—Anchor Oil Co.'s No. 1, 31-31-22, sd. Eocene Oil Co.'s No. 1, 31-31-22, rig.

LERDO—Arkelo Pet. Co.'s No. 41, 23-28-26, td 10,056 ft, plug 7400 ft, redr, at 7610 ft.

BENA—Bacal Oil Corp.'s No. 1, 5-30-30, td 1790 ft, sd. Cajalco Pet. Co.'s Brown-Pallette 1, 9-30-30, dr gray sand and shale 3474 ft.

KERN FRONT—C. C. M. Oil Co.'s Carter 1, 7-27-27, dr gray sand 4766 ft. Top Vedder 4670 ft. Seskayden Oil Co.'s No. A-3, 17-28-27, td 2890 ft, pumping 50 bbls 14 gravity oil, cut 20 percent.

WASCO—Continental Oil Co.'s K.C.L. A-2, td 5512 ft, wocs 10¾ in. at 5512 ft. No. B-1, 12-29-26 dr shale 9800 ft. Seaboard Oil-Tide Water Associated's K.C.L. C-1, 26-27-24, sd 10,213 ft, in brown shale.

DEVIL'S DEN—Den Pet. Co.'s Bates 1, 20-25-19, td 4286 ft, wocs 9 in. at 3595 ft. Geo. Goodrum's Baron 1, 24-25-18, sd 320 ft. Lube Oil Co.'s No. 1, 2-25-18, td 4280 ft, to deepen.

JASMINE—Doyle Pet. Corp.'s Quinn 1, 15-25-27, td 2956 ft, plug 2829 ft, trying to pump.

EDISON—East Edison Oil Co.'s 1, 23-30-30, dr shale 1810 ft.

ARVIN—General Pet. Corp.'s Arvin 2, 27-31-29, lcn.

PREMIER—General Pet. Corp.'s Umbsen 1, 36-27-26 dr shale 3184 ft.

ROUND MOUNTAIN—Hillman-Long's Olcese 1, 26-28-29, rig. J. J. Tavis' Olcese-Tavis 1, 4-29-29, rig.

NO. KERN RIVER—Hub Oil Co.'s No. 1, 8-28-28, sd 3320 ft.

KERN RIVER—Italo Pet. Corp.'s Koshland 1, 19-28-28, td 3578 ft, plug 1190 ft, to set 8⅝ in. Ray Luse's McNeil 1, 10-28-28, dr shale 1761 ft.

SAN EMIDIO—Kern Leasing Co.'s No. 2, 14-10-23, sd 310 ft.

GRAPEVINE—Ohio Oil Co.'s Title Ins. D-1, 21-11-19, td 9652 ft, plug 6900 ft, ran formation tester. Reserve Oil & Gas Co.'s No. 33-4, 33-11-19, dr brown shale 5366 ft. Wilshire Oil Co.'s Tejon 1, 5-10-19, td 4650 ft, fsh.

STRAND—Ohio Oil Co.'s K.C.L. E-2, 6-30-36, td 8790 ft, abn.

TEN SECTION—Shell Oil Co.'s Canal 21-14, 14-30-25, td 8613 ft, to set 8⅝ in.

FRUITVALE—Shell Oil Co.'s Bellevue A-36-31, 31-29-27, dr shale 6160 ft.

McGUNDEN — Superior Oil-Jergins Trust's Crome Com. 2, 36-29-28, dr sand and boulders 3300 ft.

MOUNTAIN VIEW — Union Oil-Standard's Barubeltz 1, 1-30-28, lcn.

RIO BRAVO—Union Oil Co.'s Kernco 1-34, 34-28-25, dr brown shale 9890 ft.

MISCELLANEOUS

HUMBOLDT COUNTY—Texas Co.'s Eureka 2, 22-3-1, td 7708 ft, co.

KINGS COUNTY—Birch-Royer Oil Co.'s Wm. Orr 1, 5-23-17, dr shale 2640 ft, 48 degree dips. Ray Bisconer's No. 2, 11-24-20, last reported depth 1400 ft. Central Calif. Utilities' Kettleman-Lakeview 3, 11-23-19, td 1202 ft, plug 1190 ft, sd. Dudley Ridge Dev. Co.'s No. 2, 24-23-20, dr shale 1374 ft. Kettleman View Oil & Gas Co.'s No. 1, 9-22-19, sd 4787 ft. Gen. C. Stone's Teeter 1, 25-20-20, sd 1315 ft. Tri-Counties Oil Co.'s Olson 1, 10-23-22, td 4300 ft, to resume operations.

MADERA COUNTY—Tide Water Associated's Gill 1, 27-12-15, lcn.

SAN JOAQUIN COUNTY — Standard's Woods Com. 1, 24-1-5, dr shale and gray sand 6088 ft. Texas Co.'s Lawrence-Stephens 1, 8-1-6, dr sandy shale 4108 ft. Amerada Pet. Corp.'s Hamilton 1, 24-4-2, rur; Marks 1, 24-4-2, td 4450 ft, shutin; Marks 2, td 4475 ft, shutin, gas. Triguerio 1, 24-4-2, td 4425 ft, gas, shutin.

STANISLAUS COUNTY — Coast Explor. Co.'s No. K-2-1, 30-4-9, td 5450 ft, ran formation tester, recovered salt water.

SUTTER COUNTY—Buttes Oilfields' No. 4, 2-15-1, td 5800 ft, sd.

TULARE COUNTY — Amalgamated Oil & Gas Corp.'s A.O.G. 1, 29-24-24, foundation. E. P. Jennings' No. 1, 4-24-23, sd 2707 ft; No. 2, 33-23-23, rig. Standard's Morris 1, 36-24-23, rur. L. E. Turner's Glaze 1, 15-22-26, dr gray sand 2550 ft.

YOLO COUNTY—Empire Oil & Gas Co.'s No. 1, 8-9-3, lcn. Standard's Hooper 1, 32-9-1, spud 7/9, dr.

MONTEREY COUNTY—Amil A. Anderson's Hillman 1, 15-24-14, td 1095 ft, co. California Oils' No. 1, 33-23-15, td 3500 ft, bailing. Shell Oil Co.'s Branch 1, 34-24-10, td 8994 ft, plug 8676 ft, gun perforated 8275 to 8335 ft, and 8138 to 8280 ft, swabbing; Branch 2, td 8662 ft, plug 8045 ft, sd.

SAN LUIS OBISPO COUNTY—Burkholder Oil Corp.'s Clay 1, 14-10-26, sd 3252 ft. R. A. Foster's McKee 1, 2-32-23, td 5087 ft, plug 3950 ft, abn. A. O. Lewis' Pecho 1, 34-30-10, td 2750 ft, bailing. Temblor Oil Co.'s No. 1, 22-31-23, dr shale 2048 ft. Vanguard Oil Co.'s Clark 1, 14-27-14, lcn. Oscar Willet's No. 1, 27-26-13, sd 300 ft, to drop from report.

SANTA BARBARA—E. C. Arnold's Arnold Apache 2, 8-8-33, dr hard shale 5194 ft. Hancock Oil Co.'s Los Alamos 2, 6-7-32, dr gray sand 3558 ft. Leora Oil Co.'s Fithian 1, 8-4-25, sd 1025 ft. Mid-Western Oil Co.'s No. L-1, 28-4-27, td 2054 ft, pumping 25 bbls, cut 95 percent. Nine Springs Oil Co.'s Brinkinhoff 1, 9-7-30, td 3300 ft, bailing mud and water. J. L. O'Donnell's No. 1, 21-10-34, lcn. 101 Oil Co.'s Hollister 1, 35-5-33, dr shale 460 ft. Pacific Western Oil Corp.'s Hobbs 1, 21-10-34, td 4225 ft, perforated, flowing by heads, to test on pump; No. 4, 21-10-34, td 2322 ft, wocs 13⅜ in. at 775 ft. So. Calif. Dr. Co.'s Houk 1, 9-9-33, td 5003 ft, wocs 7 in. at 4820 ft. Tide Water Associated's Leonis 1, 3-6-33, dr shale 980 ft. United Western Oil Co.'s No. 1, 16-7-30, grade. Valley Oil Co.'s Chief 1, 20-9-34, td 2315 ft, locating water. Vista Del Mar Oil Co.'s Williams 1, 16-4-26, dr red shale 3050 ft.

SANTA CRUZ COUNTY—Elba Oil Co.'s Elba 1, 6-12-1, dr shale 200 ft.

VENTURA COUNTY—Continental Oil Co.'s Casitas 1, (Red Mountain) 7-3-23, td 8190 ft, wocs 6⅝ in. on bottom. Oxnard Oil Co.'s Vanoni 1, 10-1-22 (Oxnard) rig. Texas Co.'s Pierce 1 (Camarillo) 20-2-21, rur.

SOUTHERN CALIFORNIA

NEWHALL — Barnsdall Oil Co.'s Rancho S. F. 1, 26-4-17, td 6472 ft, pumping 150 bbls, 36.8 gravity clean oil; Rancho S. F. 2, dr shale 3174 ft. Holbrook Pet. Co.'s Newhall Land 1, 28-4-16, td 5841 ft, wocs 6⅝ in. at 5740 ft.

PICO CANYON—A. G. Burt's No. 1, 36-4-17, td 1980 ft, waiting for heavier equipment.

LYNWOOD—Calizoo Oil Co.'s Saulque 1, 9-3-13, td 6890 ft, r.

EAST TORRANCE—Carson Oil Co.'s No. 1, 31-4-13, dr sand and shale 1770 ft.

NO. LONG BEACH — Geo. L. Clayton's Clayton 1, 32-3-12, sd 4895 ft.

FOX HILLS—Country Club Oil Co.'s No. 1, 19-2-14, dr sand and shale 3906 ft.

ROSECRANS—Harmon-Fisher's Rosecrans 1, 19-3-13, rig.

HERMOSA BEACH—C. M. Henderson's No. 1, td 2900 ft, to test on pump.

DAVIDSON CITY—Hilldon Oil Co.'s Flood Control 2, 13-4-13, spud; 7/3, dr sand and shale 1248 ft.

SUNSET BEACH—A. S. Johnston Dr. Co.'s No. 30, 20-5-11, rur.

WALNUT—Julian & Criswell's Langstaff 1, 5-2-9, dr hard sand streaks shale 1964 ft.

HAWTHORNE—Lennox Pet. Corp.'s Lennox 1, 3-3-14, dr sand and shale 3850 ft.

PALOS VERDES—McClaren Bros.' No. 1, 27-4-14, td 3970 ft, redr to 1870 ft, to run liner.

MONTEREY PARK—Wales Pet. Co.'s Haig 1, 26-1-12, dr shale streaks sand 2820 ft.

ORANGE COUNTY—Wm. Alexander's No. 1, 22-3-9, foundation. Amalgamated Oil & Gas Co.'s Parr Com. 1, 22-3-9, lcn. Mesa Oil Co.'s Mesa 1, 29-6-10, td 7865 ft, plug 6600 ft, ran 5¾ in. to 5530 ft, testing. Richfield Cons. Oil Co.'s Todd 1, 22-3-9, td 1760 ft, ran 100 ft. 8⅝ in. liner including 70 ft. of perforated to 1760 ft, bailing water. Signal Oil Co.'s Signal 1, 21-3-9, dr sand and shale 1875 ft. West American Oil Co.'s Irvine 1, 14-5-9, dr hard sand streaks shale 5680 ft.

SAN BERNARDINO COUNTY — Quartermaster Oil Co.'s No. 1 (Victor Valley) 21-5-6, lcn.

FLORIDA

LAKE COUNTY—Oil Dev. Co. of Fla.'s Gulf Expl. Co. 2, se se 17-24s-25e, testing 2500-2600 ft after pb from 6126 ft, claim so.

LEVY COUNTY—Florida Oil Discovery Co.'s Sholtz 1, sw ne 9-15s-13e, dr 430 ft.

NASSAU COUNTY—St. Mary's River Oil Corp.'s Hilliard Turpentine Co. 1, nw nw se 19-4n-24e, elev 110 ft, dr 2155 ft, hd sand.

KANSAS

BARBER COUNTY—Pryor & Lockhart's Gant 1, cse ¼ 7-31s-13w, pot. 1351 bbls oil. W. I. Southern's Davis 3, se se ne 24-34s-15w, dr 3035 ft.

BARTON COUNTY — Republic Nat. Gas Co. & Continental's Moeder 1, ne ne sw 25-17s-13w, sd. Sam Murphy's Beck 1, ne ne ne 17-17s-12w, dr 1480 ft. S. E. Bailey's Hammeke 1, ne ne sw 12-18s-12w, td 3427 ft, 700 ft oih, 4 to 10 hrs, 1200 ft oih, 15 hrs. Shell's Schneider 1, c se 12-16s-14w, dst 3347 ft, 120 ft wih and 5 ft oih, 30 min. Stanolind's Schartz 1, nw nw nw 33-19s-11w, set 7 in csg 3330 ft, rust. Helmerich & Payne et al's Sessler 1, sw sw se 29-20s-11w, pipe frozen 80 ft. Hanna et al's Luce 1, sw sw sw 21-20s-13w, dr 2520 ft. Phillips' McClanahan 1, ne ne se 7-16s-13w, cel. Ralph Wixon et al's Buhrle 1, se se ne 14-16s-13w, cel.

BUTLER COUNTY—Simpson Oil Co. et al's Dennis 1-A, ne ne sw 15-26s-6e, dr 2995 ft. Maurer & Saco Oil Co.'s Connell 1, ne ne sw 27-29s-5e, dr 2215 ft.

CHASE COUNTY—Calif-Illinois-Kansas Oil Co.'s Hughes 1, sw nw se 13-22s-9e, dr 300 ft.

CHAUTAUQUA COUNTY—Robinson et al's Foster 1, sw sw sw 6-33s-12e, dr 1810 ft. C. L. Brosius et al's Garrett 1, nw sw nw 26-32s-11e, dr 843 ft.

COWLEY COUNTY—Blair, Continental & McKnab's Miller 1, ne nw sw 14-32s-5e, td 3145 ft, pop. McCoy, Amerada & Wentz' Anderson 1, se nw ne 34-34s-6e, dr 2610 ft. Tom Palmer et al's Ogroskey 1, se se nw 31-32s-6e, abnd 3161 ft. Trees Oil Co.'s Hornbeck 1, nw nw nw 5-33s-4e, hfw 2180 ft, dr 2226 ft. Earl Wakefield's Powers 1, nw sw nw 8-32s-6e, dr 1735 ft. Lewis Prod. Co.'s Feaster 1, se nw sw 36-32s-5e, dr 375 ft. Pryor & Lockhart's Brown 1, ne se se 34-33s-3e, lcn.

ELK COUNTY—Republic Nat. Gas Co.'s Glasscock 1, se ne sw 19-31s-11e, abd 2269 ft. Tyrrell Sellars 1, se se se 11-31s-9e, testing. Morgan et al's Cook 1, nw nw nw 29-30s-12e, dr 563 ft.

ELLIS COUNTY—Empire's Samuelson 1, ne ne ne 31-11s-16w, woc. Billings' Smith 1, se se nw 14-12s-16w, rebldg rig. Earl Wakefield et al's Burnett 1, nw nw ne 1-11s-18w, dr 2555 ft. Austin Drlg. Co.'s Karlin 1, nw nw nw 13-12s-18w, spd and sd. Vickers et al's Parker 1, cn½ ne nw 35-11s-18w, hfw 2160-65 ft, run 8-in csg. Empire's Hall 1, ne ne ne 14-11s-17w, dr 1648 ft. Lario O&G Co.'s Bell 1, nw nw ne 8-12s-18w, ru. Western Kan O&R Corp. & Aylward Prod. Co.'s Schmeidler 1, nw nw nw 22-12s-17w, dr 225 ft. Reynold et al's Polcyn 1, se se ne 24-13s-16w, rig. Vickers Pet. Co.'s Lucas 1, nw nw ne 16-17s-14w, br.

ELLSWORTH COUNTY — Skiles et al's Sturn 1-A, se se sw 31-17s-9w, spd.

GRANT COUNTY—Kuhn Bros.' Alderman 1, csw¼ 18-29s-35w, dr 918 ft. Panhandle Eastern P. L. Co.'s Taggert 1, C Sec 11-30s-37w, rur.

GREENWOOD COUNTY—Ward McGinnis et al's Henley Estate 1, sw sw sw 25-25s-9e, pb.

HAMILTON COUNTY—Barnsdall et al's Porter 1, sw sw ne 30-25s-41w, dr 4750 ft.

HARPER COUNTY—Magnolia's Freeman 1, se nw sw 3-31s-6w, dr 3684 ft.

HARVEY COUNTY—Simpson & Noble et al's Pierce 1, sw se ne 25-22s-2w, dr 1200 ft. Bell O&G Co. et al's Austin 1, se ne ne 28-33s-1e, dr 2020 ft. E. I. Shaffer et al's Epp 1, se se sw 15-23s-3w, dr 2489 ft.

KIOWA COUNTY—Stanolind & Amerada's Pyle, Jr. 1, cnw ne 8-29s-16w, dr 1635 ft.

LYON COUNTY—Davis & Sory's Davis & Sory 1, sw sw se 32-21s-11e, dr 1270 ft.

MARION COUNTY—West Kan. O&R Co.'s Suderman 1, se sw nw 22-20s-2e, spd. Hutchinson O&G Co. et al's Erhman 1, se se sw 15-18s-1e, mim.

McPHERSON COUNTY — Bradley Bros.' Barnholt 1, sw sw se 30-20s-5w, td 3333 ft, 2600 ft oih, p 92 bbls oil, 3 hrs. Smith et al's Larson 1, nw nw sw 35-18s-5w, sd 3500 ft. Fred C. Frank et al's Doles 1, se nw ne 12-19s-1w, sd for wtr well. Wamhoff et al's Nuse 1, se se sw 18-18s-4w, dr 1250 ft. Clyde Pulse et al's Boesker 1, se se nw 29-20s-1w, mim.

MITCHELL COUNTY — Geo. Seidhoff et al's Greiss 1, sw sw se 16-8s-10w, set 5-in csg 3524 ft.

NESS COUNTY—Newton Dev. Co. et al's Tenny 1, nw nw se 19-18s-25w, sd 4406 ft. Jones & Lane's Page Milling Co. 1, se se nw 36-18s-26w, sd 540 ft.

PAWNEE COUNTY—Simpson Oil Co. et al's Hewson 1, se se sw 13-21s-17w, dr 3422 ft.

PRATT COUNTY — Atlantic, Empire & Skelly's Runyon 1, sw nw ne 11-27s-13w, A/w 1000 gals, so & 3 bbls wtr per hr. Skelly et al's Adams 1, se nw ne 2-28s-11w, lcn.

RENO COUNTY — Carter, Continental & Empire's Bontrager 1, C-54, ce½ ne ne 26-24s-5w, rust, 3365 ft, dr cem.

RICE COUNTY—Fred Phillips et al's Hubenett 1, sw ne sw 23-20s-8w, p 207 bbls oil 13 hrs, td A/w 1000 gals. Comanche Oil Co.'s Cramm 1, sw sw se 15-19s-9w, A/w 500 gals, p 666 bbls oil, 24 hrs. Hipple et al's Wernett 1, ne ne nw 11-20s-6w, ur 6 in csg 3510 ft. Skiles et al's Helmer 1, nw nw ne 7-19s-8w, co 3274 ft. Witt et al's Fair 1, ne se se 4-22s-8w, fsg 2245 ft. H. V. Holland et al's Brothers 1, se se se 12-21s-7w, dr 1775 ft. Gillespie et al's Strong 1, ne ne nw 9-18s-8w, ru. Bell O&G Co. & Shell Pet. Corp.'s Wilkens 1, nw nw ne 23-21s-9w, abd 3687 ft (?). Shell Pet. Corp.'s

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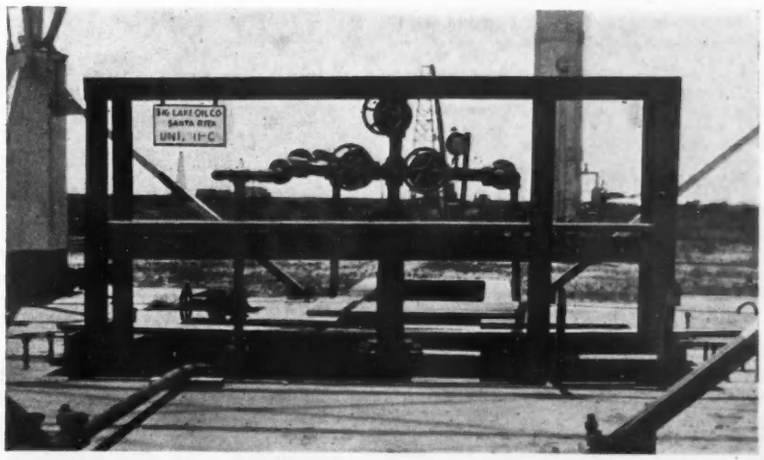

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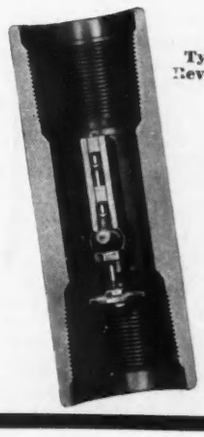

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Grizzell 1, cw½ w½ sw 5-19s-9w, dr 3095 ft.

ROOKS COUNTY—Brunson Drlg. Co. et al's Casey 1, se se ne 22-9s-16w, dr 3647 ft. S. C. Hoel et al's Ives 1, sw sw ne 11-7s-18w, dr 3390 ft. Basin Oil Co.'s Baxa 1, ne ne ne 23-9s-17w, abd 3630 ft.

RUSH COUNTY—S. A. Murphy et al's Roth 1, nw nw sw 21-16s-18w, dr 3400 ft. Duee & Brouk's Lebsack 1, se se ne 13-16s-16w, sdo 3512 ft. Westgate-Greenland Oil Co. et al's Greenwalt 1, nw nw ne 19-19s-16w, pb to 3777 ft. Carter et al's Prosch 1, cel n½ se 21-18s-16w, td 3614 ft, 18,000,000 cf gas, no oil, comp. Crawford et al's Jones 1, nw nw nw 35-17s-16w, set 15-in csg 325 ft.

RUSSELL COUNTY—Goldstein & Vernon O&G Co.'s Steinert Estate 1, ne se sw 34-15s-15w, dr 2880 ft. Aylward et al's Jones 1, se se nw 22-14s-13w, hfw 3230 ft. Billings et al's Boxberger 1, ne ne se 21-14s-14w, pot p 464 bbls oil 24 hrs, comp. Parks' Opdyche 1, sw sw sw 20-14s-13w, ru.

SCOTT COUNTY—Olson Drlg. Co. et al's Nolan 1, nw nw ne 13-19s-33w, dr 4999 ft.

SEDGWICK COUNTY — E. B. Shawver's Furman 1, sw ne se 24-29s-3w, dr 3521 ft. Union O&R et al's Howell 1, sw sw sw 6-29s-1e, dr 330 ft. Ryan Consolidated et al's Williams 1, nw nw se 17-25s-2w, circ 3941 ft. E. H. Moore's Naughter 1, sw sw nw 29-29s-1e, dr 2073 ft. Talbott et al's Downs Estate 1, se se nw 32-28s-2e, lcn.

STAFFORD COUNTY — Rosespring Drlg. Co. et al's Gray 1, nw nw nw 11-24s-13w, sso. Atlantic's Kachelman 1, se nw nw 13-25s-14w, dr 4333 ft. Newman & Winemiller's Sittner 1, ne ne ne 33-21s-12w, rig.

SUMNER COUNTY—Glimac Oil Co. et al's Proud 1, sw se se 33-30s-1w, dr 4018 ft. W. M. McKnab's Blair 1, sw sw sw 7-30s-1e, ru. Faulkner et al's Nevitt 1, ne nw ne 36-32s-6e, testing. National Ref. Co.'s Schwantes 1, nw sw ne 16-32s-3e, rig. Douglas & Gear's Strickler 1, sw nw ne 30-32s-1w, dr 940 ft.

TREGO COUNTY—W. I. Southern's Latimer 1, nw nw se 19-15s-22w, ur 7-in csg 4315 ft. Turner et al's Rogers 1, c sw 3-15s-23w, dr 4015 ft. F. L. Thorn et al's Dix 1, se se sw 31-14s-24w, dr 3188 ft.

WOODSON COUNTY — Fred. Rapp's Houghland 1, nw nw se 2-25s-15e, dr 600 ft. B&B Oil Co.'s Lockard 1, nw nw ne 2-26s-13e, dr 1040 ft.

NORTH LOUISIANA

BIENVILLE PARISH—DeSoto O&G Co.'s Wm. Ashley 1, sw se 15-16n-10w, sr 5600 ft; Wm. Ashley 2, 15-16n-10w, lcn. Hunt & Seaboard's Goodpine 1, se se 30-14n-5w, coring 7270 ft, black shale. Lide, Greer et al's Davis Lbr. Co. 2, w½ w½ 12-16n-5w, dr 5486 ft.

BOSSIER PARISH—Producers O&G Co.'s Johnson 1, 5-17n-11w, sd 5220 ft. Triangle Drilling Co.'s Howell 1, 26-17n-12w, woc 4413 ft.

CADDO PARISH—W. J. Hunter et al's N. B. Stoer 1, 10-15n-15w, dr 6519 ft. R. W. Norton's Payne 1, se se 27-23n-16w, slight so&sg 10,600 ft, pb to test at 8970-9010 ft, old td 11,486 ft, Permian salt. Prairie River Synd.'s Hutchinson 1, 15-15n-12w, dr 8068 ft. Fallon Oil Co.'s Cupples 1, 24-16n-13w, woc 5675 ft.

CLAIBORNE PARISH—J. R. Bevill et al's Alex Edmonds 1, ne ne 16-20n-5w, re-conditioning hole 5065 ft. J. B. Bond's Burgess 1, 3-20n-5w, arr ac dize, td 5800 ft. Triangle Drlg. Co. et al's Brownfield 1, sw nw 5-19n-5w, spd, dr 500 ft.

DE SOTO PARISH—Pearl Oil Corp., Joyner 1, 28-11n-12w, cor ng 5285 ft. A. D. Robinson's Allison 1, 17-14n-13w, install new rig, td 63 ft.

FRANKLIN PARISH—Jenson et al's Grayson 1, c ne 36-12n-6e, dr 2389 ft.

LINCOLN PARISH—G. E. Burford et al's Hanna 1, w½ se 34-18n-4w. H. D. Easton & Belmont Quadrangle Drlg. Co.'s G. W. Dye 1, ne ne 21-19n-4w, sw at 4731-44 ft, dry at 5010 ft, pb to test at 4584 ft. T. L. James & Co.'s J. J. Spencer 1, 11-17n-4w, straightening hole 2300 ft. E. T. Oakes, Easton et al's R. L. Sanderson 1, 30-18n-1w, dk.

MOREHOUSE PARISH—Rondeau et al's Clarke 1, 10-20n-7e, owdd, td 3755 ft.

NATCHITOCHES PARISH—Jack Lent et al's Locke 1, 26-9n-9w, sd 2962 ft. Roy Raines et al's Allen 1, 22-9n-10w, sd 220 ft.

RED RIVER PARISH—Whitehurst et al's LeLong 1, 25-12n-11w, dr 1250 ft.

RAPIDES PARISH—F. W. Martin's Hill 1, 24-5n-4w, fsg 580 ft. R. D. Webb's Brasher 1, 22-4n-2w, sd 5255 ft.

SABINE PARISH—Deep Rock Oil Co. et al's Whitney Corp. 1, 8-9n-13w, dr 7506 ft. E. Howard's Sabine Lbr. Co. 1, ne nw 24-9n-12w, rur.

TENSAS PARISH — Ark. La. Gas Co.'s Hardwood Timber Co. 1, 8-11n-10e, salt water aband, td 3180 ft. Sherrouse & Snyder's Chicago Mill & Lbr. Co. 1, 30-12n-10e, owdd, td 798 ft.

WEBSTER PARISH — Magnolia's G. W. Cole 2, 27-21n-10w, dr 7619 ft; D. G. Cox 2, 22-21n-10w, comp 32 bbls of dist per hr thru ⅜ inch and 4½ mil ft gas, td 8244 ft. Ira Cox 6, 23-21n-10w, dr 7456 ft. A. J. McCook 2, 22-21n-10w, dr 6285 ft. Aarnes-Cox 4, ne ne nw 22-21n-10w, mim. Ohio's L. M. Gardner 1, 22-21n-10w, sd 8150 ft. Crichton-Coyle 1, 21-21n-10w, sd 3110 ft. T. Chrichton 1, 2-21n-10w, woc surf casing. R. L. Holloway B-7, 23-21n-10w, dr 4950 ft. Woodley's R. C. Cox 2-B, dr 7250 ft. Bay Oil Co., A. J. Oliphant 1, ne ne 34-21n-10w, woc surf csg. Standard of La., E. L. Stewart 1, 32-21n-10w, dr 7971 ft.

WEST CARROLL PARISH—Rodessa O&G Co.'s Neely 1, se sw 19-20n-11e, dr 2210 ft.

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ACADIA PARISH—Humble's Federal Land Bank 1, North Crowley prospect, 34-8s-1e, dr shale 8408 ft. John Mayo et al's Bank of Commerce 1, e of Tepetate, 19-7s-1e, dr shale 8559 ft. W. C. Daniel's Setting 1, Trilby prospect, 17-9s-1w, dr sand 5530 ft.

AVOYELLES PARISH — Coastal Minerals Dev. Co.'s Purdy Hass 1, 25-2n-3e, dr shale 3870 ft.

CALCASIEU PARISH—Stanolind's Prairie Land & Canal Co. 1, South Lake Charles prospect, 10-11s-9w, woc 1608 ft.

CAMERON PARISH—Humble's Bell Hanszen 1, Hanszen prospect, 5-12s-6w, dr shale 8861 ft; same operator's Miani Corp. 1, Prema area, 8-14s-5w, lcn. Pure's State Mallard Bay 2, Mallard Bay prospect, 14-13s-3w, woc 2131 ft. Superior's State Gulf of Mexico 1, in Gulf of Mexico, 4-15s-8w, driving piling.

EAST BATON ROUGE PARISH—Louisiana Crusader Oil Co.'s State 2, University Block, 65-7s-1w, dr shale 7609 ft. Cavalier Oil Co.'s Elliott 1, n of Hope Villa, 3-8s-2e, fsh 6111 ft.

EAST FELICIANA PARISH—G. C. Koch et al's Andrews 1, Clinton area, 69-2s-3e, dr shale 5419 ft.

EVANGELINE PARISH—Continental's Tate 1, Villa Platte area, 44-3s-2e, dr sand no show 5218 ft.

IBERIA PARISH—Jefferson Lake Oil Co.'s Lake Peigneur 414, Jefferson Island dome, 12s-5e, woc 6686 ft.

JEFFERSON PARISH—Triangle Oil Co.'s Carroll 1, 125-12s-11e, dr shale 2716 ft.

JEFFERSON DAVIS PARISH — Louisiana Crusader Oil Co.'s Langley 1, Fenton area, 36-7s-5w, abn 9045 ft. Stanolind's Calcasieu National Bank B-2, China prospect, 28-7s-3w, sd woo at 9000 ft. Union Sulphur's T. R. S. Farms 1, South Roanoke area, 23-10s-4w, dr shale 8329 ft.

LAFOURCHE PARISH — Gulf's Louisiana State 3, sw of Marchland prospect, 36-23s-21e, woc 1455 ft.

LIVINGSTON PARISH—Neville & Grubb's Evans 1, ne of Hope Villa, 47-7s-3e, dk.

PLAQUEMINES PARISH—Gulf's State QQ 3, 17-19s-17e, no report. Tide Water's Manhatten Fruit 3, Venice Dome, 26-21s-30e, woc 7208 ft.

ST. BERNARD PARISH—Gulf's Lake Lery 2, Lake Lery prospect, 28-14s-14e, reaming 6667 ft. Southern Sulphur's State 2, Lake Borgne, 38-14s-15e, dr shale 3449 ft.

ST. CHARLES PARISH—Amerada & Louisiana Land & Exploration Co.'s State 1, Black Prince Island prospect, 13-15s-20e, preparing to drill ahead in salt at 8638 ft.

ST. LANDRY PARISH—Gulf's Haas Hirsch 1, Krotz Springs area, 12-6s-7e, dr shale 6880 ft.

ST. MARTIN PARISH—Texas Co.'s State 3, Lake Mongouloi salt dome, 14-10s-9e, pb 6720 ft.

ST. MARY PARISH—Texas Co.'s State 1, Bateman Lake area, 21-16s-12e, fsh 10,541 ft; same operator's Horseshoe Bayou 1, on Horseshoe Bayou, 40-17s-9e, fsh 12,261 ft.

VERMILION PARISH—Continental's Brookshire 1, Abbeville area, 66-12s-3e, dr shale 8972 ft.

VERNON PARISH—Gaston Creek Dr. Co.'s Llano Del Rio 1, 34-2n-9w, loc. Geo. J. Greer's Commercial Bank 1, se of Leesville, 9-1s-8w, dr shale 4118 ft.

NEBRASKA

DAWES COUNTY — Stephens Petroleum Corporation's S. J. Palmer 1, nw sw 10-35n-50w, dr 2300 ft.

SIOUX COUNTY—J. M. Huber Corporation's Morgan 1, csw sw 32-35n-56w, rur 2985 ft.

MONTANA

BLAINE COUNTY—Nadeau Bros., Fee 1, nw nw se 33-34n-17e, dr 175 ft.

CARBON COUNTY—George Muth & Ft. Peck Association's 1, csl se se 23-6s-23e, dr 1575 ft. R. C. Tarrant's Heare 1, cwl ne nw 14-6s-19e, dr 130 ft.

CARTER COUNTY—Tower Oil Co.'s 1, csw nw 8-9s-16e, dr 131 ft.

PONDERA COUNTY—Kirk Oil Co.'s Kellogg 1, se nw ne 31-26n-4w, dr 2300 ft.

YELLOWSTONE COUNTY — Broadview Dome Oil Co.'s Halbritter-Stoltenberg 1, ne ne sw 18-3n-23e, dr 150 ft. Western Dakota Oil Co.'s Fox 1, ne 14-2s-23e, dr 659 ft.

MICHIGAN

ALLEGAN COUNTY—Champion Dev. Co.'s Siko 1, sec 9-2n-13w, lcn. Hubel Oil Pro. Co.'s Madal 1, ne ne sw 18-1n-13w, lcn. Flannigan & Kehlet's Clair 1, sec 29-1n-13w, testing so & w 1360 ft.

ARENAC COUNTY—Gordon Oil Co.'s State B1, sec 2-19n-3e, dr 2200 ft. E. H. Linaberry's McTaggart 1, sec 26-19n-3e, sd 1900 ft.

CASS COUNTY—L. T. Barber's Beebe 1, sec 3-5s-15w, dr 1700 ft. Wayne Oil Co.'s Gebhard 1, sec 34-5s-15w, dr 250 ft.

CLARE COUNTY—Pure Oil Co.'s Apel 1,

sec 31-19n-5w, dr 600 ft. James E. Peirce's Mortenson 1, 9-18n-5w, co 1250 ft.

GLADWIN COUNTY — Harold Hand's Smart 1, sec 29-17n-2e, 100 ft. Bell & Mark's Steel 1, sec 22-20n-1e, dr 2800 ft. D. E. Hughe's Cox 1, se se ne 12-19n-2w, mim. Dapar Oil Co.'s Villeneuve 1, sec 11-20n-2w, rig.

GRATIOT COUNTY—Sam Siegel's Kerr 1, sec 36-10n-1w, sd 2250 ft. H. B. Cowdry's De-Vuyst 1, sec 11-10n-2w, dr 2250 ft. Gulf Ref. Co.'s Lyon 1, sec 26-9n-2w, sd 2920 ft. Carter Oil Co.'s Hirschman 1, e½ se ne 13-10n-3w, dr 500 ft.

OTSEGO COUNTY—D. Geraldine's Fee 1, sec 34-30n-3w, lcn. Harley William's Raae 1, sec 15-30n-1w, sd 2270 ft. Barton & William's Yuill 1, sec 9-32n-3w, dr 260 ft.

SAGINAW COUNTY—Mid West Pet. Co.'s Shields 1, sec 5-11n-2e, testing so 3136 ft, swab 21 bbls; Spurbeck 1, se se ne 6-11n-2e, rig. Darke Brothers' Hart 1, sec 11-11n-3e, dr 2890 ft. Doran & Hilliard's Dobs 1, sec 33-11n-1e, dr 1200 ft.

MISCELLANEOUS COUNTIES: Bay—Wright & Keeler's Booth 1, sec 24-14n-6e, dr 400 ft. Cheboygan—Bert Francis' Campbell 1, sec 7-34n-1w, dr 250 ft. Crawford—Dome Oil Co.'s Lindgren 1, sec 33-25n-3w, rig. Emmet—Cheboygan Oil Co.'s Barney 1, sec 12-35n-4w, dr 500 ft. Huron—C. W. Teater's Haldane 1, sec 30-16n-12e, dr 1000 ft. Tosco—Pabst Oil Co.'s Monfort 1, sec 8-22n-6e, sd 2400 ft. Livingston—O. A. Daniel's Boardway 1, sec 17-4n-3e, lcn. Mackina—Charles Van Kuren's Hiawatha 2, sec 5-44n-9w, lcn. Missaukee—Rex Oil Co.'s Meekoff 1, sec 30-21n-6w, dr 2600 ft. Oscoda—Burr Oil Co.'s Smith 1, sec 36-27n-2e, lcn. Sanilac—T. H. Ferguson's Obee 1, sec 17-14n-14e, dr 250 ft.

MISSISSIPPI

BOLIVAR COUNTY — Phillips Pet. Co.'s Perthshire 1, 2-24n-7w, 10 in csg 1062 ft, dr 1280 ft. White & Jones' Ballou 1, ne ne 18-24n-7w, rebldg dk, td 1680 ft.

CALHOUN COUNTY—Ed Spencer's J. C. Conner 1, se ne 12-24n-8e, lcn.

GEORGE COUNTY—Cleve Love et al's J. J. Newman Lbr. Co. 1, c sw 9-1s-8w, dr 4005 ft, gummy shale.

HARRISON COUNTY—G. A. Hesse et al's Hingen 1, c ne 12-7s-10w, elev 69 ft, install heavier rig, td 2332 ft.

LAMAR COUNTY—Sun Oil Co. et al's Mrs. K. Talley 3, 33-4n-15w, elev 388 ft, dr 4953 ft, chert.

MADISON COUNTY—Sun Oil Co.'s J. E. Wilson 1, se se 1-8n-2w, elev 218 ft, top Yegua 354 ft, cemt 13¾ in csg 390 ft, sr 1850 ft.

SUNFLOWER COUNTY—Phillips Pet. Co.'s Dockery 1, sw ne 27-22n-4w, rur.

WILKINSON COUNTY—Chas. Green et al's Taylor 1, 4-3n-1e, elev 251 ft, spd setting surf csg. A. B. Taylor et al's Miss-Wis L&T Co. 1, nw sw sw 16 in csg 75 ft, 10¾ in csg 668 ft, dr 1050 ft.

YALABOUSHA COUNTY — Skuna Dev. Co.'s Mrs. T. A. Turner 1, se sw ne 26-25n-6e, making test at 600 ft.

OKLAHOMA

ALFALFA COUNTY—Olson Drlg. Co. et al's Acre 1, csw ne 14-24n-11w, abd 7332 ft.

BECKHAM COUNTY — Mid-American Oil Co.'s Biscoe 1-A, sw sw sw 28-8n-22w, dr 2129 ft. Bud Lewis' Douglas 1-A, cse ne 21-8n-26w, lcn.

CADDO COUNTY—Clyde Becker et al's Pharris 1, cse se nw 24-6n-12w, dr 5200 ft.

CLEVELAND COUNTY — Hollenback's Stinson 1, nw nw ne 17-9n-2w, fsg. Hollenback et al's Ward 1, sw se ne 30-7n-1e, rog.

COMANCHE COUNTY — C. V. Morris' Young 1, se ne se 24-3n-10w, dr 1000 ft. Holliday's Kuntz 1-A, cse ne se 21-4n-11w, dr 2793 ft.

COTTON COUNTY—I. T. I. O. Co.'s Collins 1, ne ne ne 18-4s-10w, dr 100 ft.

CREEK COUNTY—Continental et al's Community 1, ne ne sw 7-15n-7e, lcn. Mosier et al's Holcomb 1, se sw ne 19-18n-8e, hfw 3002 ft, sd. Jackson's Alberty 1, ne ne nw 25-18n-9e, rust.

GARFIELD COUNTY—Ohio's State 1, sw sw sw 13-23n-2w, td 5200 ft, D&A.

GARVIN COUNTY—Carter's Potts 1, ce½ se nw 36-1n-3w, dr 1124 ft. Nels-Buffington et al's J. E. Burch 1, se se sw 3-3n-1w, dr 3030 ft.

GRADY COUNTY—Gulf Oil Corp.'s Thomas 1, sw nw nw 14-4n-5w, dr 3490 ft. Doyle Pet. Co.'s Huffine 1, cnw nw se 30-5n-8w, lcn.

GRANT COUNTY—Carter et al's Crisman 1, nw sw nw 16-25n-3w, dr 4866 ft; Kolarik 1, csl s½ sw 4-28n-5w, dr 5198 ft.

HASKELL COUNTY—Continental's Anderson 1, sw se ne 33-8n-20e, dr 5556 ft.

HUGHES COUNTY — Chas. Thornton's Eason 1, ne ne nw 7-9n-11e, sd 3460 ft. E. H. Moore's Buck 1, nw sw sw 21-8n-10e, td 2903 ft, to fish. Moroney & Healey's Field 1, cnw sw 11-9n-11e, fsg 2780 ft. Texas Co.'s Cox 1, ne nw nw 23-9n-8e, woc. W. O. Allen's Barnard 1, sw sw sw 24-8n-8e, dr 1500 ft.

JOHNSTON COUNTY—Neff & Godfrey's Chapman 1, csw se sw 36-4s-4e, dr 950 ft.

KAY COUNTY — Black Gold Oil Co.'s Cooley 2, sw sw sw 25-28n-4e, dr 1165 ft.

LINCOLN COUNTY—Ross Oil Co.'s Bailey 1, se se sc 22-15n-6e, flo 2,000,000 cf gas thru csg, 800 lbs. press, comp. Cimmaron Oil Corp.'s Frank Orner 1, csw se 31-17n-2e, dr 2660 ft.

LOGAN COUNTY—Freeland et al's Woods 1, se se sw 27-17n-1e, rog. Shell et al's Waddle 1, sw se nw 36-15n-4w, dr 2490 ft. Sunray & Olson Drlg. Co.'s Canning 1, sw sw ne 31-17n-1w, dg cel.

LOVE COUNTY—Sinclair Prairie's Stockton 1, se se sw 26-6s-2w, 85 bbls oil 24 hrs.

MAJOR COUNTY—Ed V. Parsons et al's Patzkowsky 1, cnw¼ 10-20n-11w, rig.

MARSHALL COUNTY—Stewart & Taylor's Chestnut 1, ne ne ne 23-8s-5e, sd 782 ft. Stewart & Taylor's Chestnut 2, ne ne ne 23-8s-5e, woc 751 ft

McCURTAIN COUNTY — Wilcox O&G Co.'s No. 1, sw se sw 30-2s-27e, dr 650 ft.

MURRAY COUNTY—O. O. Owens' Fryer 1, ne se ne 34-1s-3e, sd 2574 ft. Power Oil Co.'s Lancaster Trust Co. 1, csw ne 10-1s-2e, bldg der.

NOBLE COUNTY—Lincoln Oil Co. et al's Neil 1-A, ne ne ne 15-23n-2w, dr 4985 ft. Stanolind & Amerada's Johnson 1, nw nw se 4-20n-2w, dr 5240 ft. Herndon Drlg. Co.'s Baggett 1, se se se 13-21n-3e, dr 680 ft.

OKFUSKEE COUNTY—Riverland Oil Co.'s Board 1, ne nw se 10-13n-10e, dr 2750 ft. Burke-Greis' Rhea 1, sw sw se 14-10n-9e, rust. F. W. Merrick's Mackey 1, ne ne sw 25-11n-10e, dr 415 ft.

OKLAHOMA COUNTY — Frank Buttram et al's Cole 1, nw nw nw 16-14n-1e, dg cel.

OSAGE COUNTY—Norbla Oil Co.'s No. 1, se se se 36-23n-6e, dr 950 ft.

PAWNEE COUNTY—Carter's Wells 1, ce½ se nw 30-23n-5e, dr 2040 ft.

PAYNE COUNTY—H. F. Young's Jenkins 1, se ne se 4-17n-3e, dr 4595 ft.

PONTOTOC COUNTY—Southern Oil Co.'s Young 1, ne ne se 17-3n-7e, woc. Roodhouse et al's Booth 1, se nw se 20-2n-6e, pb. Clark Drlg. Co. & Delaney's Richardson 1, se se sw 30-4n-8e, dr 4065 ft. Norbla Oil Co.'s Kennedy 1, se se ne 13-2n-5e, dr 1031 ft. Union Dev. Co.'s Abbott 1, sw nw ne 34-3n-6e, dr 1123 ft. W. E. Delaney et al's Payton 1, ne ne se 1-4n-7e, dr 3245 ft.

POTTAWATOMIE COUNTY—Stanolind & Amerada's Billington 1, sw se sw 32-9n-3e, testing. Atlantic's Dooley 1, se se sw 9-11n-5e, co. Mid-Continent et al's Ne-Thah-Pea-Se 1, se se ne 24-11n-4e, dp stuck 3700 ft. C. H. Yookum's No. 1, se se ne 27-6n-4e, C&P

PUSHMATAHA COUNTY—Erle Halliburton et al's Bogwell 1, sw ne ne 30-3s-15e, dr 3345 ft.

SEMINOLE COUNTY—Stanolind & Amerada et al's Salina 1, se ne nw 4-5n-6e, C&P.

STEPHENS COUNTY—Carter et al's Harley 1, cne ne 24-2s-4w, dr 6947 ft. Coline Oil Co.'s Johnson 1, csw se ne 1-2n-8w, dr 7399 ft. Ed Parsons et al's Blake 1, csw nw 22-2n-8w, dp stuck 4674 ft. Helmerich & Payne's Graham 1, csw sw ne 12-1n-5w, flo 410 bbls oil thru 2½-in tbng. 1,000,000 cf gas, comp.

TILLMAN COUNTY—I. T. I. O. Co. et al's Hatler 1, csw ne 32-2s-17w, pumping.

WASHITA COUNTY—John Koberg's Harms 1, cnw nw ne 6-10n-16w, dr 2500 ft.

EAST TEXAS BORDER COUNTIES

HARRISON COUNTY—J. B. Bond's Martin 1, Martin sur, 16 in csg 80 ft. Highway 80 Oil Co. of Texas' Mabel George 1, J. S. Powell sur, claim so sr to 2506 ft.

MARION COUNTY—Ark.-La. Gas Co.'s Al-

INFERNO

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VALVES

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Here is a Safety Valve that discourages theft because it is made of materials which have no junk value. Malleable iron body — much stronger than brass. Renewable Nickel Alloy valve and seat. Cadmium plated springs. Stainless steel stems. For pressures up to 500 lbs. per square inch. Tested, set and sealed at minimum A.S.M.E. blow down unless ordered otherwise. Factory service for testing and resetting. A much finer piece of mechanism than the ordinary pop safety valve, but economical because made in the standard two-inch size to conform with A.P.I. and A.S.M.E. codes.

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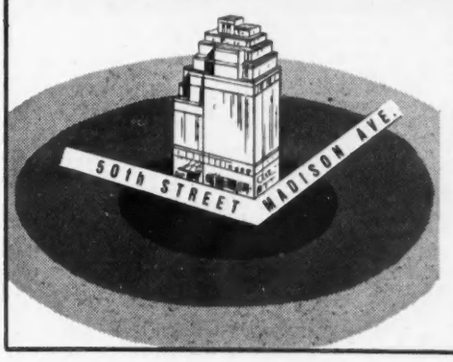

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MADISON AVENUE AT 50th STREET • NEW YORK CITY

len Houston 1, A. de los Santos Coy sur, completed flowing 38 bbls hr & making ¼ mil ft gas daily through ½ in choke tub pres 280, cas pres 1100, td 6076 ft. Fant 1, A. de los Santos Coy sur, dr 4900 ft. Wood 1, J. C. Eaton sur, spd. Fohs Oil Co.'s Mary McReynolds 1, A. de los Santos Coy sur, top first anhydrite 5298 ft, arr drill plugs and test, td 6101 ft. United's J. H. Hutchinson 1, A. de los Santos Coy sur, dr 5905 ft. Mid-Continent Pet. Co.'s Sory 1, A. de los Santos Coy sur, dr 3450 ft. Gulf's Lizzie Henderson 1, R. Bennington sur, mim. Shell's Henderson 1, R. Bennington sur, lcn. Holcomb & Thomasson's Hillard & Womack 1, R. Bennington sur, lcn.

PANOLA COUNTY—Danciger O&G Co.'s J. W. Tatum 1, Alfred Bissell sur, woc 10 in csg 1270 ft, Glassell & Glassell's Pierce & Chesbro 1, Julia Soape sur, fsg 5881 ft. Magnolia Pet. Co.'s E. A. Hull 2, Thos Applewhite sur, dr 6854 ft.

SHELBY COUNTY—Wm. Redditt et al's Pickering Lbr. Co. 1, Stephen English sur, elev 303 ft, si, td 4109 ft. Portex Oil Co.'s (formerly H. A. Stebbinger et al), Pickering Lbr. Co. 3, A. Hansen sur, rur.

SOUTH TEXAS

CORPUS CHRISTI DISTRICT

ARANSAS COUNTY—Barnsdall Oil Co.'s Kate Edwards 1-A, Wm. Lewis sur, dr 9165 ft.

BROOKS COUNTY—Standard Oil Co. of Texas' Mestina Oil and Gas Co. 1, R. G. Salinas sur, perf 7 in csg 5147-60 ft, swabbing down fluid to test through 2 in tbg, td 6786 ft; Mestina Oil and Gas Co. 8, La Mestina y Gonzalena gr, ru.

CAMERON COUNTY—Ruez-Morton, Inc.'s United Land Irr. Co. 1, lot 7, blk 402, sd for orders, dr stem stuck, td 6000 ft. Saxet Prod. Co. and A. W. Phillips' Port Isabel et al 1, Espiritu Santo gr, lcn temp abnd. Rowan & Hope will not drill. Stapper Pet. Corp.'s Port Isabel Irr. Co. 1. Espiritu Santo gr, abnd 7777 ft.

GOLIAD COUNTY — Brown & Wheeler, Inc.'s J. R. Kauffman 1-D, P. Trevino sur, flowing about 8 bbls per day, ¼ in ch, tbg pressure 600 lbs, cp 600 lbs, csg perf 4373-92 ft, abnd, td 4554 ft. Dirks Brothers' Dr. G. W. Allen 1-A, Obid Marshall sur, abnd 4550 ft. Goliad Oil Co.'s S. E. Cole 1-A, lot 33, range 4, Goliad Town tr, dr 4976 ft.

HIDALGO COUNTY—Felmont Oil Corp.'s Mayer & Weill 1, tr 1, por 47, lcn. Dayle L. Smith Oil Co.'s Fairbanks & Young 1, blk 14, por 46, reinstated, reaming down to dd, depth corrected 2169 ft.

JACKSON COUNTY—George J. Greer et al's J. R. Davis 1, D. H. Hoffman sur, dr 5925 ft, dst 5734-43 ft, ¼ in ch, t 7, b 25 thribbles sw—no pressure 10 min.

JIM WELLS COUNTY—La Jita Oil Corp.'s (John F. Camp Dr. Co.) W. E. Pope 2-B, sec 13, abnd 6261 ft. Magnolia Pet. Co. et al's A. A. Seeligson 7, Los Jaboncillos sur, set 9⅝ in csg 6160 ft, no prod test made, csg just for protection, test drilling ahead to 8000 ft. Memphis Natural Gas Co. & Smith Drilling Co.'s W. D. Wade 1, blk B, Bode subd, dr 4575 ft. Tsemelis & Reese's Martha Earhart 1, John Suggs sur, perf 2173-81 ft with 11 shots, comp 40 million cubic feet gas, casing pressure 900 lbs, td 4005 ft.

KARNES COUNTY — Dinero Oil & Gas Co.'s H. Koehler 1, Victor Blanco gr, drk. Pettus O&R Co.'s Mrs. R. A. McKinney 1-A, R. C. Ballard sur, ru.

KLEBERG COUNTY—John F. Camp Prod. Co.'s C. Phillips Wardner, Trs. 3, Paco Ancho de Arriba gr, temp abnd. W. L. Hinds Co.'s D. M. Murchison 1, K. T. & I. subd, sp and comp, ru for 6000 ft test.

LIVE OAK COUNTY—Henshaw Bros. and Walter C. Nelson's Alfred Wesch 1, Alfred Wesch 100-ac of R. Tripplet sur, woc 210 ft. Loma Oil Co.'s S. A. Joint Stock Land Bank 1, John Turner sur, set sur csg; Schwartz 1, Mark Killely sur, D&A 1675 ft. W. C. McBride, Inc.'s A. Sanger 1, sec 391, GC&SG sur, set sur csg, dr 300 ft.

NUECES COUNTY — Mills Bennett Prod. Co.'s William Heuermann 1, C. Land sur 408, abnd 6403 ft. Fain Gillock et al's Robert Poenisch 1, lot 11, sec 32, Flour Bluff and Encinal Gardens tr, lcn; Robert Poenisch 2, lots 7 and 8, blk 32, Flour Bluff and Encinal Garden Tracts, dr 2865 ft. W. L. Hinds' Lucy J. Rivers 1, sec. 301, Bishop subd, sd 6015 ft. Seaboard Oil Corp. of Delaware's J. O. Chapman et al 1-C, sec 111, Laureles Farm tr, dr 4816 ft in sand and sh, ran electric formation tester. Seaboard Oil Corp.'s Ed Jurica 1, W. Robertson Farm Tracts, blk 32, ru to dd, td 5554 ft. Southern Minerals Corp.'s H. G. Yakey 1, sec 38, King Ranch subd, mir. United Prod. Corp.'s T. S. Schroeder 1, Andres Fernandes de la Fuentes sur, ab 311, set sur csg, td 1500 ft. Sam E. Wilson's J. E. Herold 1, lot 2, sec 6, Bohemian Colony subd, comp drk and pits and laying wtr lines.

REFUGIO COUNTY—Conroe Drilling Co.'s (J. V. Chew & O. V. McIntire), F. E. Kloesel 1, sec 11, Bonnie View Ranch subd, mir. Edwin M. Jones' Ben Shelton 1, Refugio Town gr, dr 7200 ft, no shows. Randon Oil Co. & American Liberty Co.'s J. Vincent 1, blk 9, Randon Oil Co. O&G lse, subd, CEIP&M sur, cored sand oil show 5718-23 ft, ream to core ahead, td 5723 ft. United Prod. Co.'s J. J. O'Brien 12, Refugio Town Tracts, pb after testing wtr in 7900 ft perforations, td 9225 ft. Wynne Dr. Co.'s J. A. Lambert 1, James Power and James Hewitson sur, lcn.

SAN PATRICIO COUNTY — Danrey Oil Co.'s Jean Davis 1-A, Wm. Boyd sur, dr 5300 ft. Eleanor Oil Co.'s J. F. Green Est. 1, T. T. Williamson sur, still swabbing showing only dead oil with which well was washed before swabbing, td 7305 ft. Humble O&R Co.'s John S. McCampbell 1, R. Martinez sur, dr hrd snd 6743 ft. Plymouth Oil Co.'s J. F. Odem 1-A, Archibald Herron sur, fsg for dr pipe, td 5080 ft. Wellington Oil Co.'s James F. Welder 1-B, sec 6, Cubage & Miller subd, cor 5379 ft.

VICTORIA COUNTY—Magnolia Pet. Co.'s Mrs. Meta Beck 1, T&NO RR sur, in sh drilling 3895 ft. Transwestern Oil Co.'s A. M. McFaddin 3, J. Viarin sur, comp 50 million cubic ft, td 6231 ft, tp 200 lbs, cp 1950 lbs.

WILLACY COUNTY — Shell Pet. Co.'s Yturria Land & Cattle Co. 1, sh 64, San Juan de Carritos gr, prep to test sand 7300 ft, td 10,283 ft.

SAN ANTONIO DISTRICT

ATASCOSA COUNTY—Priest et al's Birdwell 1, J. P. Gorman sur, sd 1725 ft.

BASTROP COUNTY—Sherman Nelson's K. M. Litton 1, Addison Litton sur, sp and sd, wor.

BEXAR COUNTY — American Gas Co.'s Oliver 5, M. F. Rodriguez sur, reaming to run more pipe, td 3478 ft. Edna May Oil Co.'s Mrs. C. N. Cassin 1, Fernando Rodriguez sur, dr sh 920 ft. L. K. Oil Corp.'s William A. Russell 2, Fernando Rodriguez sur, dr out plugs, 6⅝ in csg 1102 ft, top ch 1104 ft, td 1116 ft

BLANCO COUNTY—D. N. Johnson's W. D. Glasscock 1, W. D. Stannock sur, sp. E. L. Nixon's H. Hohenberger 2, Adolph Jonas sur, move off rig to be sd for 60 days. H. T. Roe's Polk Morrisey 4, Thos. H. Webb sur, dr 65 ft, set 8 in csg, will carry.

CALDWELL COUNTY—Allbright et al's C. P. Smith 1, James Berry sur, drk up only. B. C. Armstrong et al's Wilson Bell 1, Solomon Seal sur, sp. H. J. Baker's F. Smith 1, R. Davidson sur, dr Del Rio, td 3310 ft, chalk dry. R. T. Belcher's Mrs. G. Moody 1, Solomon Seal sur, mir this week. Chiquita Oil Co.'s Chas. P. Ross 1, Samuel Shupe sur, mim. Fain Gillock's Mrs. J. P. Welder 1, A. Floyd sur, sd 20 ft. W. E. Housel et al's M. C. Driscoll 1, James Berry sur, abnd 1544 ft. J. O. Mack's B. Withers 1, W. House sur, dr 1600 ft. Richardson Pet. Co.'s Patterson 1, Wm. Pettus sur, D&A 780 ft. Richardson Pet. Co.'s J. M. Trammell 1, E. Berry sur, sd 2210 ft. Rosita Oil Co.'s Lockhart State Bank 1, John Roe sur, pumping and flowing 33 bbls per hr, td 2204 ft. Siznod Oil Corp.'s A. B. Reed 1, Miles G. Dyke sur, mim for Edwards lime test. Spokane Oklahoma O&G Co.'s K. Dougherty 1, J. Tyler sur, dr 1475 ft. Stapper Pet. Co.'s M. August 1, A. Floyd sur, prep to mi. Mrs. M. R. Tinkle's S. M. Blackwell 1, Richard Miller sur, dr 1395 ft. F. R. Williams' H. L. Rodenberg 1, James Berry sur, re-acidizing, td 2010 ft.

COMAL COUNTY—John R. Yates' Erhard Heidrick 1, A. M. Holbrook sur, mir.

DIMMITT COUNTY—Paul C. Teas & Maryland Oil Corp.'s S. E. McKnight 1, sec 23, haven't started yet. Wilcox Oil & Gas Co.'s Light Ranch 1, I & G. N. sur, dr 8020 ft.

EDWARDS COUNTY—Amon G. Carter et al's Frank J. Sweeten Ranch 1, G. C. & S. F. sur, sd for rotary, td 710 ft.

FRIO COUNTY—Amerada Pet. Co.'s Mrs. D. D. Harrigan 1, blk 77, Salvador Flores sur, woc after plugging back to comp in ch td 6410 ft. Pagenkopf & L. C. Jamieson's Blackaller Estate 1, James Courley sur, dr Del Rio top chalk 2467 ft, td 2776 ft.

GUADALUPE COUNTY—Ralph E. Fair, Inc.'s Fritz E. Hemple 1, G. W. Williamson sur, now swabbing—swabbed 8 to 10 bbls of oil little sw td 2240 ft. Josey Oil Corp. et al's J. Seeligman 1, J. W. Williamson sur, drk. Kennedy & Drowley's Gus Jahns 1, Jose K. Davis sur, changed working valves td 2507 ft. W. Scott Townsend's Tom Terrill 1, Jesus Cantu sur. abnd 2102 ft.

KENDALL COUNTY—J. E. Landon & C. F. Peffley's C. A. Sidensticker 1, sur 257, sp.

MAVERICK COUNTY—Rio Dev. Co.'s State Bank & Trust Co. 4, sur No. 1, blk 16, lcn. Rio Dev. Co.'s P. W. Thompson Est. 1, sur No. 5, ru.

MILAM COUNTY — Kingdoor Exploration Co.'s J. C. White et al 1, Bynum Wikson sur, dr 3622 ft.

TRAVIS COUNTY—J. F. Jourdan's Dr. J. V. Siegmund 1, A. M. Leavy sur, D&A 805 ft.

WILSON COUNTY—F. H. Eckert & Sons' Federal Land Bank 1, Rafael Salinas sur, coring below for 1030 ft snd, td 1025 ft. R. C. Stanley's R. M. Hierholzer 2, R. Salinas sur, running perf liner to btm, running tbg on packers, td 1031¼ ft.

LAREDO DISTRICT

DUVAL COUNTY—Conservative Oil Co.'s DCRC 1, sur 47, haven't started yet, lcn only. Government Wells Oil Co., Inc.'s H. A. Lundell 2 sec 140, comp 23 bbls per hr ⅜ in ch, tp 110 lbs cp 375 lbs, td 1528 ft. Hiawatha O&G Co.'s M. M. Miller 2, Agua Poquita Gr. dst 5854-62 ft, rec 300 lbs pres, no wtr & 3 thribbles of dr mud 3 min, wo orders, may comp as gas well, td 5862 ft; Southland Life Ins. 3, sec 15, Ball Ranch subd, dr 5705 ft. John H. Hougen, Trustee's W. H. Patton, Trustee 1, sur 148, lcn. King Drilling Co.'s Atlee Parr 1, ran Schulumberber 6500 ft to 6531 ft, no details, td 6531 ft. Lockhart Bros.'s Atlee Parr 1, sec 277, dr 300 ft. Magnolia Pet. Co.'s DCRC 2, sur 58, dr 1679 ft. Magnolia Pet. Co.'s F. Weil et al 1, sur 565, abnd 4073 ft. Navarro Oil Co.'s E. M. Rossi 1, sec 11, Santos Flores Gr, failed on three drill stem tests 5330-42 ft, now conditioning hole for further tests, td 6179 ft. Parr Oil Co.'s W. W. Meek 1, sur 212, snd 1514-24 ft, 17 min, dst 1514-24, showed 60 ft oily mud, td 2740 ft. Penn-Palangana Oil Co. et al's C. K. Gravis 1, sec 254, coring 5060 ft. Reynosa Oil Co.'s W. R. Peters 1, sur 37, lcn. Standard Oil Co. of Kansas' Atlee Parr 1, San Andres Gr., flowed 265 bbls 24 hrs, new snd 4738-43 ft. 3/16 in ch, tp 450 lbs, cp 710 lbs, extended field 4500 ft to south, td 4747 ft. Standard Oil Co. of Kansas' Mable Rossi 1, blk 10, Sweden subd, set csg on snd woc, td 4794 ft; V. L. Rossi 1-A, sec 19, lcn. Woodley Pet. Co.'s F. Vello Puig 1, San Andres Gr., comp drk.

JIM HOGG COUNTY—Henry M. Brown, Trustee,'s Sylvester Gutierrez et al 1, sec 22, sh 4 of El Peyote Gr, sur 579, sp.

McMULLEN COUNTY—Edwards & Zoch's Two Rivers Ranch 1, sec 60 Two Rivers Ranch encountered gas snd about 1076 ft, cored ahead to 1110 ft & found sw in that snd, cor ahead td

Notice is hereby given that Tracts 147, 149, 150, 167, 168, 170, 171, 193 and 194, located in Copano, St. Charles, Aransas and Red Fish Bays, in Aransas and Nueces Counties, which were to have been leased to the highest bidder on July 27, 1937, by the General Land Office, have been taken off the market and bids on same will not be accepted.

Signed: Wm. H. McDonald, Commissioner.

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1110 ft. Harvey & Henderson's Nueces Land & Livestock Co. 1, sec 105 B. S. & F. sur, dr 500 ft. W. L. Hinds' Douglas W. Rhodes 1, sd for pump repairs, td 945 ft. W. P. Howard's B. C. Claunch 9, S. Calliham M Hely sur, lcn. Howell Oil Co.'s Kate Martin 1, D. Easterpr sur No. 213, wait on orders. Yegua 1200-1214 ft, electric formation tester showed 10 ohms snd 2595-2607 ft, good some resistance, core show no oil or gas, snd in Queen City 3300 ft to td, 3510 ft, dry cored 2595-2607 ft, dry may skid over or whipstock, on a rock. Edwin M. Jones' Harry Ezzell 5, sec 39, H. M. Brewer sur, D&A several small shows, td 3108 ft; Harry Ezzell 5, C. Q. Ragland sur, dr 1150 ft. J. T. Lanier's E. R. Hagist 1, sur 481, dr 1660 ft, gas show 1540-50 ft. Rowan & Nichols' Douglas W. Rhodes 1, M. F. Lowe sur, sd 1800 ft. V. G. Schimmell et al's E. R. Hagist 2, R. W. Mills sur, ru. C. C. Shumway et al's Shiner Ranch 10, sec 51, dr plugs 1584 ft. Smith & Story's A. J. McKean, Sr. 1, sec 200 M. R. Vela sur, dr 1100 ft. E. P. Tinney's Jerry Rutherford 1, blk 17, Live Oak School Land sur, lcn.

STARR COUNTY—Calderoni-James-Folette's Francisco Rodriguez 1, sh 56, por 80 J. of Camargo, prep to mi larger rig, td 150 ft. Cook, Maris, Arnolo's Starr County Cattle Co. 2, Cook, Maris, and Arnold sur, por 89, prep to mi larger rig, td 2465 ft. Danrey Oil Co.'s Cayetano Ramos 2, sur 149, dr ahead no reports. Gilcrease Oil Co.'s De Castillo 1, lot 9, Walker subd, cor 900 ft; C. M. DeCastillo 2, por 77, sh 7-D, will start soon. E. A. Graham & King-Wood Co.'s Yturria Land & Livestock Co. 1, por 38, cored Barlow snd 2995-3012 ft, dst 15 min ⅜ and ¼ chs rec 13 ft oil with 100 lbs pres, core ahead extends field 3000 ft northwest, td 3012 ft. Henry Mode et al's Kelsey Bass 1, blk 7, Kelsey Bass subd, por 86-87, mi larger rig, td 3507 ft. Palmetto Oil Co.'s (Carter & Stiernberg) Quirino Vela 1, por 85, dr 1800 ft; Quirino Vela 2, lot 9, blk in El Tangue subd, por 84 & 85, dr 1700 ft. The Texas Co.'s A. V. Guerra 6-A, por 67 J. of Mier, dr 2040 ft. Transwestern Oil Corp.'s T. B. Slick School 1, sur 266, ru.

WEBB COUNTY—Eugene Garner, Jr.'s R. Saldivar 2, sur 657, sd 1000 ft. O. W. Killam's A. M. Bruni Est. 2, blk 83, Borrego Gr., lcn; D. G. Garcia 7, sur 786, dr 1200 ft. Lutex Oil Co.'s Lone Star Con. Co. 2-A, por 12, fsg for bit, td 3451 ft. J. W. Magee's E. Garcia 1, Henry James subd, resume dr 40 ft. Randon Oil Co.'s Joe C. Palmer 1, sur 474, ru & sd to clear titles.

ZAPATA COUNTY—Allison & Abrams' S. Vala 1, sur 259, dr 1030 ft. Gilcrease Oil Co.'s Antonio Trevino 2, por 2 & 3, d & a no shows, td 2150 ft. O. W. Killam's A. M. Bruni Est. 1, J. V. Borrego Gr., dr 850 ft. Eugene Mays et al's Adela G de Flores 1, blk 198, mim. J. O. Sheffield's C. H. Buck 1, blk 15, J. O. Sheffield subd, sur 273, stdg 2238 ft. Starr Dev. Co.'s Paula V. de Garza 1, blk 34, C. A. Douglas sur, abnd 1865 ft.

TEXAS GULF COAST

BRAZORIA COUNTY — Pure's Slade 1, Peach Point prospect, S. F. Austin sur, reaming 8353 ft. All other wildcat operations in this county are only locations.

CHAMBERS COUNTY — David B. McDaniel's Barrow 1, nw of Anahuac, Luke Bryan sur, preparing to spud.

FT. BEND COUNTY—Research Oil Co.'s Moore 1, ne of Orchard, S. Kennedy sur, dr shale 5000 ft.

HARRIS COUNTY—Humble's Settegast 1, Friendswood area, Perry & Austin sur, comp 650 bbls daily, ¼in ch, 6009 ft. Superior's Butler 1, Bammel area, J. Ehrhardt sur, dr shale 9665 ft. Texas Gulf Producing Co.'s Gillispie 1, Aldine area, S. Contreras sur, abn 8084 ft.

JEFFERSON COUNTY—H. B. Hebert & S. Smith's Broussard Trust 1, Pine Island area, J. W. McGattey sur, abn 7360 ft.

MATAGORDA COUNTY — Continental's Hawkins 2, Sheppards Mott area, D. McCarthy sur, fsh 6619 ft. Royal Oil Co.'s Ewing 1, Sugar Valley area, A. S. SoJourner sur, reaming 8508 ft.

NEWTON COUNTY—Houston Oil & Republic Prod. Co.'s Sabine Tram 1, Bunker Hill area, H&TC sur No. 35, dr shale 2308 ft.

UTAH

GRAND COUNTY—Cane Creek Oil Co.'s Government 1, nw sw 31-25s-21e, dr 248 ft.

WYOMING

BIG HORN COUNTY—Big Horn Petroleum Trust Co.'s Parker 1, csw sw 23-49n-89w, dr 1408 ft. Wood Callahan Oil Co., Ltd.'s Evans 1, ne ne nw 12-49n-91w, dr 1975 ft.

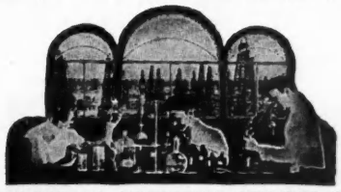
CARBON COUNTY—Ohio Oil Co.'s Wyoming Oil & Gas Co. 1, se sw 29-27n-89w, woc 114 ft.

PARK COUNTY—General Petroleum Corporation's Government 1, nw nw nw 33-47n-100w, mij 5380 ft.

PLATTE COUNTY—Dividend Oil & Refiners, Inc.'s 1, csl sw sw 17-24n-66w, fsg 2385 ft.

SWEETWATER COUNTY—Mountain Fuel Supply Co.'s Williams 1-A, cne ne 5-12n-95w, fsg 350 ft. Williams 1, 1060 ft s/n and 660 ft w e, ru.

GEOPHYSICAL SOIL SURVEYS FOR OIL
10 Sample Survey $50. Total Cost: Mid-West



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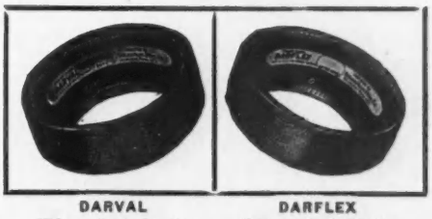

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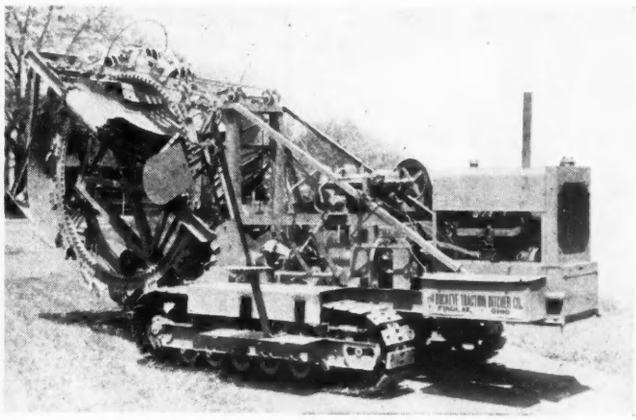
The low bearing pressure of the alligator treads—approximately six pounds per square inch, permits use of the machine over soft ground and prevents damage to lawns and driveways when the machine is used for small sewer, water or other utility lines.



Buckeye Model 12

Eight digging speeds, all transmission controlled, are instantly available to the operator, ranging from 22 to 98 inches per minute. Eight more digging speeds are made quickly available by moving a feather keyed sprocket into position and adjusting the chain. Another sprocket is also furnished which further increases the digging range, giving a top speed of 23 feet per minute.

Trench widths possible with the Model 12 Buckeye run from 15 to 22 inches, with depth up to 5½ feet, fitting the machine to wide field of service ditching.

Over-all width of the machine is 77½ inches, with a length of 23½ feet. A trailer provides a convenient means of moving the ditcher where it is to be moved any considerable distance. Or it can be loaded, full assembled on the average heavy-duty truck. The ditcher has a road speed of 1.59 to 3.21 miles per hour under its own power.

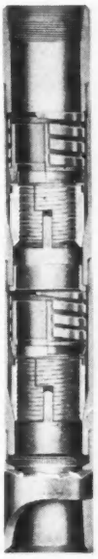
DIE HEAD
Landis Machinery Company

Landis Machine Company, Waynesboro, Pennsylvania, has added a new die head for threading large diameters, long thread lengths to its line of threading equipment.

The diametrical capacity of the head is 4 to 5⅛ inches with a pitch range of 7 to 20 threads per inch. Thread length, while not unlimited is sufficient to take in an exceptional range.

The new die head belongs to the Landmatic Series and is of the self-opening, pull-off type for application to turret lathes and to hand screw machines. It is heat treated throughout and ground for maximum wearing qualities. Diametrical graduations on the circumferential surface and micrometer graduations on the adjusting screw insure rapid and accurate size changes.

The 40 AX Landmatic head carries 6 chasers mounted on the face of the head similar to the 4-chaser die head. By using 6 chasers instead of 4, the cutting load is more widely distributed. Thus the working parts of the head as well as the part being threaded are subject to much less cutting stress. The results are an increase in tool life with more threads obtained per grind of the chaser, improved quality of the product being threaded, and also an increase in the life of the die head.



American Overshot

OVERSHOT
American Iron & Machine Works

American Iron & Machine Works Company, Oklahoma City, Oklahoma, and Houston, Texas, announces a new and improved releasing and circulating overshot, double bowl type.

By using the American double-bowl type overshot, the manufacturers say that operators have a fishing tool available at all times whether fishing for twisted-off drill pipe or tool joint. The drill stem can be run into the hole immediately, thus preventing the fish from freezing or falling into a cavity. In case operators have the regular type American overshot it is possible to have it converted into a double-bowl type by ordering extra slips and the necessary integral parts, the manufacturers advise.

MUD MIXING GUN
Chiksan Oil Tool Company

Chiksan Oil Tool Company, Ltd., Fullerton, California, has developed a gun designed for the purpose of mixing mud.

It consists of a Chiksan high-pressure steel swing joint to which is connected a four-foot nozzle. A handle is provided of sufficient length for the easy operation of the gun. The nozzle is furnished with a special abrasive-resisting steel tip with a ⅞-inch opening and is carefully shaped to give a streamlined compact flow to insure the maximum amount of jetting action.

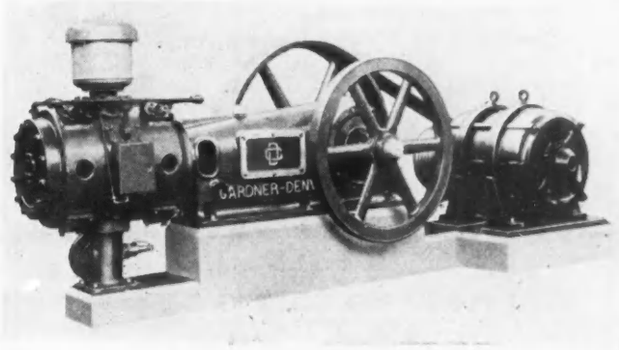
Double ball races in each joint permit complete 360 degree rotation in both vertical and horizontal planes. The patented packing method insures complete and easy rotation without leaks at both low and high pressures.

PETROLEUM BIBLIOGRAPHY
University of Texas

University of Texas, Austin, recently published an interesting book, "Petroleum and Natural Gas Bibliography," by Robert E. Hardwicke of the Fort Worth bar. The volume is the result of an effort to compile and classify items of literature in English for which copyrights have been issued, and includes many other published items that have been catalogued by the Library of Congress. All references fall within the field of book literature, as distinguished from periodical literature, relating wholly or nearly so to petroleum and natural gas. Further particulars may be had by writing the university.

COMPRESSOR
Gardner Denver Company

Gardner-Denver Company, Quincy, Illinois, announces an improved single-stage, horizontal air compressor for heavy-duty full load service and continuous operation at low



Gardner-Denver Compressor

power costs. Known as the "RX" Compressor, it has totally enclosed dustproof construction without sacrifice of accessibility as well as accurate balance and freedom from vibration.

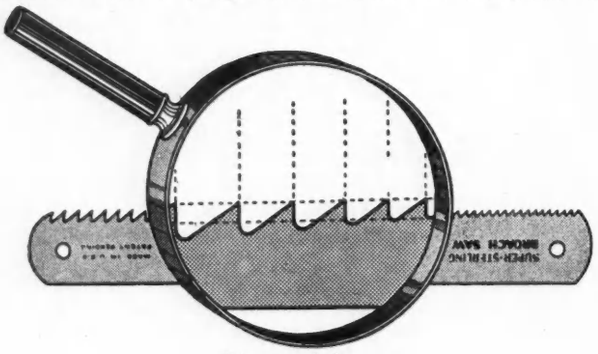
Another important feature of this compressor is the electro-pneumatic control. With this control the compressor always starts unloaded and the air supply is automatically adjusted to fit the air requirements, resulting in exceptional part-load economy. The compressors are equipped with Timken tapered adjustable roller main bearings.

BROACH SAW

Diamond Saw and Stamping Works

Diamond Saw & Stamping Works, Buffalo, New York, has placed on the market a new type of hack saw.

From the first tooth on the starting end of the saw to the last tooth is progressive increase in the pitch and



Diamond Saw

height of each tooth. Each succeeding tooth is larger, which allows each tooth to take a larger bite, making for increased speed in cutting. In addition to faster cutting, this design is said to have produced a blade extremely free cutting, and in hand operation **the smooth action is plainly noticeable.**

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MECHANICAL ENGINEERS' HANDBOOK

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ROBERT T. KENT,
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and a staff of specialists.

This volume deals with the entire field of power and its appplications that are of interest to the mechanical engineer, while present-day methods in design and shop practice will be covered in detail in the forthcoming second volume of the handbook, to be ready in 1937. Basic mathematics, physics and chemistry have been removed to a separate volume.

Contents of the POWER Volume: Air; Water; Heat; Combustion and Fuels; Steam; The Steam Boiler; The Steam Engine; The Steam Turbine; Condensing and Cooling Equipment; Refrigeration and Ice Making; Heating, Ventilating and Air Conditioning; Internal Combustion Engines; Gas Producers; Transportation; Electric Power; Power Test Codes; and Mathematical Tables.

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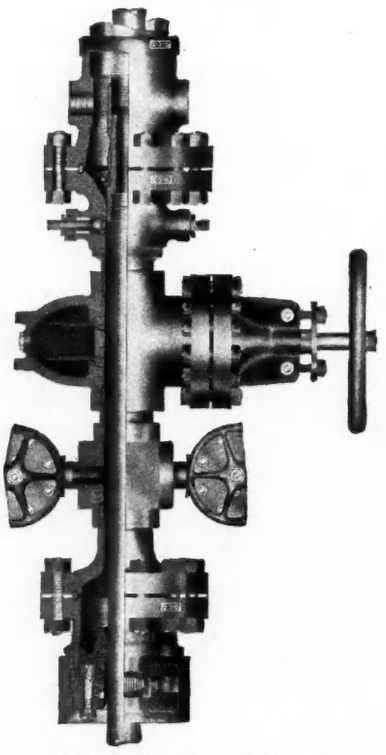
Houston, Texas

TUBING HEAD HOOK-UP

Oil Center Tool Company

Oil Center Tool Company, Houston, Texas, has placed on the market a type "H-6" retractable seat tubing head hook-up which permits washing behind liner before packer is set. The tubing head body screws on the oil string before plug is drilled, and plug is drilled through blowout preventer equipment installed on tubing head body. After drilling the plug, blowout preventer equipment is removed and a joint, or two, of tubing, with liner and packer installed below, is lowered in the hole. Then, the top assembly of the Christmas-tree is stripped over the tubing and connected to the main body of the tubing head. An O-C-T blowout preventer, equipped with a stripper rubber and installed above the tree, permits running the tubing string to bottom, the stripper rubber passing tubing collars and serving as a stuffing box while washing behind liner. The tubing hanger, which also passes through the stripper rubber, is made up in the tubing string at the desired point. The retractable seats provided in the tubing head bonnet are screwed out to permit the hanger to pass while lowering the tubing string to wash behind the liner and collapse the packer. After this operation, tubing is then raised to the suspending point and the retractable seats are screwed in to engage the tubing hanger. The landing joint of tubing is then backed out and raised above the master gate valve, which is then closed, and the blowout preventer is removed. A bull plug and pressure gauge are then installed to complete the tree.



O-C-T H-6 Tubing Head

The type "H-6" O-C-T tubing head, shown in the accompanying illustration with a threaded connection on top of the bonnet, is also available to accommodate flanged gate valves.

According to the manufacturers, this tubing head hook-up permits the use of regular tubing throughout . . . no flush joint tubing being required to complete the well.

ROOSEVELT COUNTY, NEW MEXICO MAP

Zingery Oil Map Company

Zingery Oil Map Company, Fort Worth, Texas, has published a new ownership map on Roosevelt County, New Mexico, covering the east three-fifths of the county on a scale of 4000 feet to the inch. It requires several months to compile the necessary information—homestead names and addresses with present leases, federal permits with names, numbers and date of grant also all state leases with expiration dates. The map shows all oil development, total depth of dry holes with intermediate tops on various formations.

TACHOMETER

Herman H. Sticht Company

Herman H. Sticht Company, New York City, has announced a new hand tachometer for testing normal rates of rotation or speeds.

This Week with the Industry's EQUIPMENT SUPPLIERS

Haynes Stellite Company Plans Plant Addition

Haynes Stellite Company, Harrison and Lindsay Streets, Kokomo, Indiana, has announced plans for the construction of a new building at its plant in Kokomo to provide room for the company's growing business. Plans call for a new two-story fireproof office building, 132 feet long and 44 feet wide.

The office building exterior will be of brick and stone construction, and its entrance and interior are to be decorated with stainless steel and marble. This new structure is the first of several contemplated under an expansion program. Plans also provide for remodeling the present office building into a recreation center.

E. C. Dilgarde MacClatchie's Rocky Mountain District Repr.

MacClatchie Manufacturing Company, Compton, California, announces appointment of E. C. Dilgarde as its Rocky Mountain district representative with headquarters as Casper, to handle business in Wyoming, Montana, and

E. C. DILGARDE

Canada. An old timer in the oil business, Dilgarde has had a wide experience in many phases of the industry, including drilling, rotary operations and production as well as in the sales department.

Walter O'Bannon, Jr., Transferred to Tulsa Office

Walter O'Bannon, Jr., vice president, Walter O'Bannon Company, who has for some time been in eastern oil states engaged in sales promotional work for the company, has recently returned to Tulsa from Mt. Pleasant, Michigan. O'Bannon attended St. Albans College,

WALTER O'BANNON, JR.

Washington, D. C., the University of Pennsylvania, and graduated from Stanford University in 1935. For a short time after leaving Stanford, he was connected with Walter O'Bannon Company of California, West Coast distributor of O'Bannon products. He now will be engaged in sales promotional work with the principal office of the company at Tulsa as his headquarters.

Rieber Laboratories Opens New Offices in Houston

Frank Rieber announces the recent opening of new offices of the Houston Division of Rieber Laboratories, located at 1002-3 Esperson Building, Houston. The Houston division is in charge of E. M. Lane who has been a member of the Rieber organization for

FRANK RIEBER

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SURE

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"The Entirely Different Boiler and Engine Treatment"

SAFE because it is guaranteed free of acids or caustics of any kind. This pure colloidal concentrate is absolutely harmless to all equipment and persons applying it. Sand-Banum does not act in a "chemical" sense but mechanically holds all water impurities in colloidal suspension, thus making it impossible for scale and corrosion to form in its presence.

SANE because it is a proven product of merit. Every user has found it a more efficient, economical and simpler method of controlling scale and corrosion problems in boilers and engines. It comes ready for use in 16-ounce cans—a few ounces from one to four times per month assures the production of efficient steam. Its simplicity of application is welcome in every modern plant.

SURE because its scientific action is infallible—it works regardless of the nature of the water or the operating conditions. And we stand behind Sand-Banum with a sincere "Satisfaction or No Money" guarantee.

Prove it today in your own plant! Send for informative booklet "HOW and WHY"!

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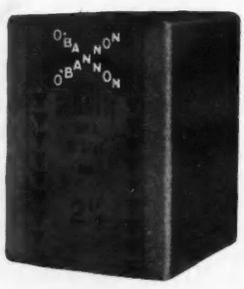
Just because all balls and seats look so much alike do you feel they **are** pretty much the same? If you were to follow through the many details of manufacturing O'Bannon balls and seats —see how an intimate knowledge of oil field requirements is embodied in design and workmanship — you'd realize there is a difference! You would be more particular about what kind you use — and the chances are you would want O'Bannon.

Because of this intimate knowledge of oil field needs there is in the O'Bannon line a ball and seat to meet every well condition.

WALTER O'BANNON COMPANY

Tulsa, Oklahoma

Buy balls and seats from your supply store in this identifying package.



O'BANNON
BALLS and SEATS

E. M. LANE
In charge of Houston division for Rieber Laboratories

the past 10 years. William H. Gayman and Neville C. Hunsaker are attached to the Houston office as geophysicists and Olai I. Torkelsen as geologist. Rieber has recently returned from a tour of inspection of the field work now being conducted with the Sonograph by the Houston division.

C. M. W. Rand, Jr., Joins Pittsburgh Equitable Meter Co.

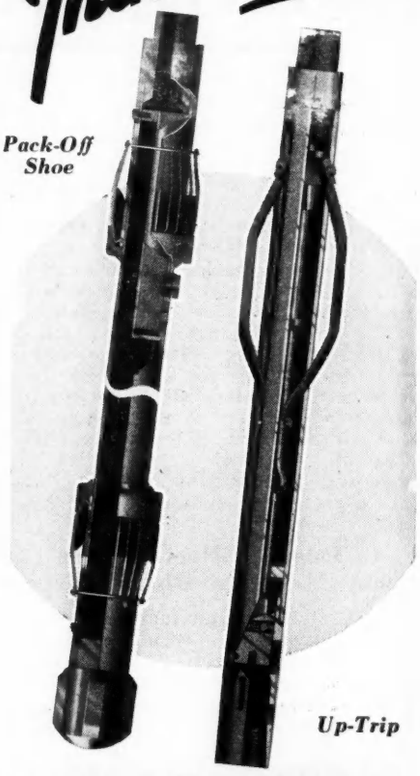
Pittsburgh Equitable Meter Company and its subsidiary, Merco Nordstrom Valve Company, announce the appointment of C. M. W. Rand, Jr., to its sales staff.

C. M. W. RAND, JR.

Rand, before joining the meter and valve companies, was employed by the Columbian Iron Works division of the Mueller Company. For a number of years he was instructor in the sale of fire hydrants and other products to Mueller representatives on the west coast. He has also represented this company in the southeast, mid-south and Texas.

He will sell Pittsburgh water meters, gasoline and oil meters and Nordstrom lubricated plug valves in Alabama, Mississippi, east Louisiana and west Florida.

Introducing



THE CAVINS *Perforation* WASHER

The Cavins Perforation Washer is a combination of the Up-Trip Device and Pack-Off Shoe, shown above, with The Cavins Automatic Hydraulic Suction Bailer.

This tool is without a parallel for cleaning perforated oil strings, liners and screens. It utilizes the natural forces present in the well to effectively remove sand, mud, shale, etc., from behind the pipe, through the perforations.

It is efficient, convenient, and simple to operate, and makes the job easy and economical. Write for descriptive bulletin.

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Squeaks from the Bull Wheel

His Reason

He was visiting the newlyweds at their home. Everything was fine, but—

"Why did you take a flat with such a tiny kitchenette, Tom, old boy?"

"Well, you're the first man I've told, so keep it quiet. It's so small that I can't get in there to help my wife when she's washing the dishes."

Epitaph

A nervous man was Bill Green,
Who worked upon the leases,
He kicked a can of glycerine,
And then flew all to pieces.

—*Pure Oil News*

Fine Business

"Tried your new automobile on the road yet?"

"Yes, and I had a fine ride."

"Goes fast?"

"Not so fast as the cop. That's where the fine came in."

Worn Down

The doctor was visiting Rastus' wife to deliver her twelfth offspring. While riding along with Rastus he saw a duck in the road.

Doctor: Whose duck is that?

Rastus: That ain't no duck. That's the stork with his legs wore off.

He Probably Would

I would like to see the lady of the house.

Lawsy, I specs you would—she's taking a bath.

Coincidence

"I warn you, I sha'nt be able to pay for this suit for three months."

"Oh, that's all right, sir. Don't worry."

"Thanks. When will it be ready."

"In three months, sir."

Shrewd Fishermen

Two Welshmen were fishing about two miles from land. They had had an excellent catch. Thomas said to David: "We'd better mark the spot in case we come out tomorrow!"

On reaching the shore Thomas asked, "Did you mark the place?"

"Yes," said David, "I put a chalk mark on the left-hand side of the boat."

To which Thomas replied: "Silly, we might not have the same boat tomorrow!"

No Doubt

"If you added seventy-six thousand, nine hundred and twenty-three to eighty-one thousand, four hundred and twelve, what would you get?"

"A wrong answer."

Changed

"George," said Mrs. Lovewell to her husband, "I have received a letter from mother saying she is not accepting our invitation to visit us, and saying we do not appear to want her. What does she mean by that? I asked you to write and tell her to come at her own convenience. You wrote to her, didn't you?"

"Yes," said George, "but—er—I couldn't spell that word 'convenience,' so I made it 'risk'."

Did It Happen in Kentucky

It was a warm day, and a dull case concerning the rights of certain river commissioners was being argued in court.

Counsel made speeches of interminable length, and the judge fell into a doze.

"But we must have water, your honor," thundered the defending lawyer in such stentorian tones that the judge came to.

"All right," he mumbled hastily, "but only a very little in mine."

Temporing It

The doctor was dismissing his maid, and told her: "I'm sorry, Jane—but I can only truthfully say in your reference that you are not at all fond of work!"

"Well, sir," Jane requested hopefully, "do yer think yer could find a Latin name for it?"

More Scotch

Sandy was engaged to a girl who, a few days before graduation, succumbed to the appeals of her friends and had her hair bobbed. They congratulated her on her improved appearance and it was therefore without any misgivings that she showed herself to her sweetheart. However, Sandy viewed her with gravity.

"It's hard on me, lassie," he said: "verra hard! After I've bought ye a packet o' hairpins for a graduation gift."

Next

"Hey, that wasn't the tooth I wanted pulled."

"Calm yourself, I'm coming to it!"

Agreeable

"What is the shape of the earth?" asked the teacher, calling suddenly on Wee Wullie.

"Round," said Wee Wullie.

"How do you know it is round?" asked the teacher.

"Well," says Wullie, "it's square, then; I dinna want ony argument aboot it."

Obviously

The famous detective arrived at the scene of the crime.

"Gracious," he said, "this is more serious than I thought. This window has been broken on both sides."

Early Start

On their honeymoon, the couple stopped at a lakeside resort. They spent their first evening there out in the moonlight in a boat.

The following morning the bride's mother got a postcard which read:

"Arrived safely. Grand row after supper."

"My!" she muttered. "I didn't think they'd begin quarreling so soon."

Stimulant

Wife: "The doctor asked to see my tongue. Then he said right away that I needed a stimulant."

Hub: "Heavens! I hope he didn't give you a stimulant for your tongue!"

ARE YOUR wells—in?

Sand and sediment in your wells make them poor producers, clean them out quickly and at small cost with the MILLER — *the Sand Pump with the powerful suction action that is in world wide use.*

The MILLER is made in diameters of 2½, 3, 3½, 4, 4¼, 5, 5½, 7 and 9 inches and lengths of 20, 25 and 30 feet. 5/32-inch wall thickness in REGULAR Type, ¼-inch wall tubes HEAVY Type Sand Pumps.

INTERCHANGEABLE BOTTOMS
To Meet Every Condition

- **BAILER BOTTOM** — With the Bailer Bottom installed the MILLER is quickly changed to a Bailer giving you a combination of either Bailer or a Sand Pump in one tool.
- **SAND BOTTOM** — Used when tools are run and when well is shot to quickly remove loose material.
- **STAR BOTTOM** — Used for cutting the sand loose.
- **CHISEL BOTTOM** (In Pump) — With this bottom tightly packed sand can be easily broken in small pieces so it can be picked up in the pump.

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See Page 1186 COMPOSITE CATALOG

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